WSDOT Olympic Region

Route Development Plan

Washington State
Department of Transportation

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIC REGION
TUMWATER, WASHINGTON

ROUTE DEVELOPMENT PLAN
STATE ROUTE 410
SR 167 INTERCHANGE TO PIERCE/KING COUNTY LINE
MP 8.84 TO MP 21.99

November 1997

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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
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Approved By:

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Region Administrator, Olympic Region

Nov 13, 1997
Date

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Date

STATE ROUTE 410 ROUTE DEVELOPMENT PLAN

SUMMARY OF STAKEHOLDER RECOMMENDATIONS

ACCESS MANAGEMENT

- This was a major focus point that helped the steering committee develop highway mobility recommendations.
- The RDP introduces the WSDOT Access Management Plan Classifications. Typical Roadway sections are presented that highlight median treatments associated with the Class 2 and 3 designations. Recommendations regarding Median Barrier, Raised Curbed Medians, and TWLTL's are discussed.

HIGHWAY MOBILITY

- Construction of High Occupancy Vehicle (HOV) Lanes from SR 167 to 184th Avenue East vicinity in Bonney Lake.
- Within Bonney Lake no additional lanes are planned, however this report highlights some access management measures to improve operating conditions on this multi-lane facility.
- 214th to Mundy-Loss Road--Widening to four lanes is recommended. This Access Management Class 2 facility is recommended to receive median barrier as part of this improvement. Selected intersections in this segment would remain accessible to left turns and possibly U-turns.
- Entering the City of Buckley, at Mundy-Loss Road, SR 410 should be widened to four or five lanes. This Class 3 Access Management facility should receive either raised landscaped islands or a center two-way left-turn lane as a median treatment.

HIGHWAY SAFETY

- Realign 234th Avenue to tie in at 233rd Avenue.
- Realign SR 165 "wye" intersection to intersect SR 410 as a "tee" intersection.
- Traffic signals have been recommended at several locations along SR 410 in Pierce County and in the City of Buckley. These locations include 233rd/234th; 254th; 262nd; Mundy-Loss Road; SR 165; and Park Ave. These locations will first need to meet warrants for signals.

TRANSIT, PARK AND RIDE LOTS, AND NON MOTORIZED

- Increased transit service is encouraged by WSDOT.
- A park and ride lot is planned for the vicinity of 184th Avenue east in Bonney Lake.
- Facilities for Pedestrians and Bicyclists include the highway shoulder along SR 410. Also, sidewalks are planned as part of highway improvements in the City of Buckley and possibly Bonney Lake. Other city and county roads also are recommended for non motorized travel.

CONTENTS

Vision Statement

An efficient network of transportation facilities in the Puget Sound Region is vital to moving people and goods. Transportation affects us all--our lives and livelihoods depend a great deal on a transportation system that offers opportunities for various choices and modes of travel. To many extents our transportation facilities have been provided to meet the travel needs, but they were constructed to accommodate a population of the past.

In order to assure an efficient transportation system for the future, it is important to plan for the growth that continues to occur. This Route Development Plan (RDP) outlines a vision for the future development of State Route 410. It was created with the help of a Stakeholder Steering Committee and citizens who took an active interest in the transportation planning process. This Plan provides recommended improvement strategies to existing and future deficiencies of the transportation system in the SR 410 corridor. Some of the recommended improvements in this RDP, such as access management implementation, are critical to assure adequate operation of State Route 410 in the future.

The recommended improvements and goals for the future development of SR 410 were achieved through cooperative planning efforts and consensus with affected city, county, and regional agencies. The State Route 410 Steering Committee members provided valuable contributions in the development of this RDP. They shared with the committee their respective agency Comprehensive Plans and transportation goals, policies, and targeted highway improvement projects. Collectively, these Comprehensive Plans and the WSDOT *Highway System Plan* provided the impetus for what is recommended in this Route Development Plan.

SR 410 Route Development Plan

Study Limits

State Route 410 (SR 410) is an important east-west transportation link between the South Puget Sound region, in Pierce County, and the Central Washington region near Naches, in Yakima County. The route is approximately 107 miles long. This Route Development Plan covers the first section (13.15 miles) of SR 410, from where the route begins in Sumner, at the Interchange with SR167 to the Pierce/King County Line, near Buckley.

Organization of this Report

The SR 410 Route Development Plan is organized by various topics. To begin with, Chapter 1 discusses the route location, its classifications and existing conditions such as highway alignment, right-of-way, and geometric cross sections.

Chapter 2 presents traffic and land use information. Highway operating Levels of Service (LOS) are summarized, and tables are provided that highlight existing and future LOS fo highway segments.

Chapters 3 presents recommendations for highway improvements, Access Management Plan Classifications, Design Speeds, Traffic Signal "candidate" locations and Non-Motorized transportation facilities.

Additional supporting information is contained in the appendices.

Stakeholder Involvement

A steering committee was formed to guide transportation decisions and reach a common vision on issues discussed in this RDP. This committee included representatives from city and county agencies, the Puget Sound Regional Council, WSDOT, Office of Urban Mobility, and a transportation interest group known as the Rails to Trails Coalition.

WSDOT conducted several public open houses to present information and solicit comment from the public regarding this RDP. Additionally, a public opinion survey was conducted 300 residences and a majority of the businesses within the study limits of the SR 410 corridor.

Route Development Plan Recommendations

The recommendations in this Route Development Plan represent the efforts of many discussions with local agencies and the public. To aid the steering committee in reaching consensus on issues such as mobility and access management, many documents, including the WSDOT *Highway System Plan,* March 1996 and the city and county comprehensive planning documents, were consulted. The WSDOT *Access Management Plan* classificatior of SR 410 influence the type of roadway median sections proposed as part of the mobility recommendations.

Some of the recommended improvements in this RDP include:

- Construction of High Occupancy Vehicle (HOV) Lanes from SR 167 to 184th Avenue East in Bonney Lake. This extends the current WSDOT *Highway System Plan* HOV recommendation further east to the vicinity of a planned park and ride lot in Bonney Lake.
- Within Bonney Lake no additional lanes are planned, however this report highlights some access management measures to improve operating conditions on this multi-lane facility.
- In Pierce County, from 214th Avenue East to the intersection of Mundy-Loss Road, widening to four lanes is recommended. This Access Management Class 2 facility is recommended to receive median barrier as part of this improvement. Selected intersections in this segment would remain accessible to left turns and possibly U-turns

- Entering the City of Buckley, at Mundy-Loss Road, SR 410 should be widened to four or five lanes. This Class 3 Access Management facility should receive either raised landscaped islands or a center two-way left-turn lane as a median treatment. One section near the SR 165 junction presently has a TWLTL.
- The "wye" intersection with SR 165 should be realigned to intersect SR 410 generally in the same location but as a "tee" intersection.
- Traffic Signals have been recommended at several locations along SR 410 in Pierce County and in the City of Buckley.
- A park and ride lot is planned for the vicinity of 184th Avenue east in Bonney Lake.
- Non-motorized improvements and transit are also discussed in Chapter 3 of this RDP.

Conclusion

Transportation planning is an ongoing process and must be flexible in order to incorporate unforeseen trends. One of the goals of this plan is to integrate the Department of Transportation's needs with the needs of local transit authorities, cities, counties, regions, citizen groups, and the traveling public. It is believed that this plan, along with a certain amount of flexibility, will provide a safe and well integrated transportation system for State Route 410. This plan will be updated and modified periodically as changes occur along the corridor, and as resources allow.

When approved, this long range plan will provide guidance for development of the Olympic Region's program of projects as well as guiding the Region's Development Services Office in defining developer impact mitigation measures. The Washington State Department of Transportation expresses its sincere appreciation to the individuals and local and regional agencies that took an active role in the development of this plan. Final approval of the State Route 410 Route Development Plan is issued by the WSDOT Olympic Region Administrator.

Chapter 1 Description of Existing Facility and Services

1.1 Highway Location and Route Overview

State Route 410 (SR 410) provides a very important east-west transportation link between the South Puget Sound region, in Pierce County, and the Central Washington region near Naches, in Yakima County. The route is approximately 107 miles long. This Route Development Plan studies the section of SR 410 from Sumner, at milepost 8.84 to the Pierce/King County Line, in Buckley, at milepost 21.99.

City of Sumner Vicinity

SR 410 begins in the City of Sumner, in north central Pierce County as a fully limited access multi-lane freeway with a posted speed limit of 55 miles per hour. Its beginning milepost is 8.84, at its junction with an interchange connection with State Route 167, near the convergence of the White and Puyallup Rivers. From this point SR 410 travels east through south Sumner, with interchanges to local arterials provided at Linden Drive, State Route 162, and 166th Avenue East. The mileposts (MP) of these interchange structures are MP 9.32, MP 10.40, and MP 11.48 respectively. In the short segment between the SR 167 and Linden Drive interchanges, SR 410 is a six lane facility divided by median barrier. Beyond Linden Drive the highway provides two lanes of travel in each direction, with a soil depressed median used to separate opposing travelers. The four interchanges provide a sound network of access points to and from the highway within the southern limits of Sumner.

City of Bonney Lake Vicinity

Continuing from the 166th Avenue Interchange, SR 410 ascends several hundred feet above the Puyallup River Valley as it climbs the section known as Elhi Hill. Two lanes of travel continue in each direction on the hill. To accommodate this, the highway median narrows and median barrier separates travel directions. The highway enters the City of Bonney Lake at milepost 12.72. On Elhi Hill, SR 410 travelers begin to notice changes in highway character, specifically the fact that public and private roads intersect SR 410 at-grade, and at milepost 12.72 the highway speed limit is reduced to 45 miles per hour. At the intersection with Myers road, milepost 13.10, the first median opening occurs, allowing an at-grade left turn movement. At milepost 13.37, the first traffic signal is encountered, which controls the intersection of 181st Street and the Sumner Buckley Highway. On a clear day eastbound travelers are treated to a view of Mount Rainier at this location. Before reaching the present east city limits at milepost 15.36, an additional five traffic

signals are used to control four-way and three-way intersections of city streets and access points to several shopping malls. With the exception of a short two-way left turn lane between Sumner Buckley Highway and 184th, the section of SR 410 through Bonney Lake utilizes median barrier and flush medians with rumble strips. This median treatment restricts left turning movements to the provided signalized intersections. Near the east city limits of Bonney Lake, two more traffic signals are quickly encountered. They control the intersections of 211th Avenue East and 214th Avenue East. These are located at mileposts 15.39 and 15.60. This makes a total of eight traffic signals between the Sumner Buckley Highway and 214th Avenue East, a distance of only 2.23 miles.

Rural Pierce County

Beyond the intersection of 214th, SR 410 narrows to a two lane undivided rural highway, with an increased speed limit to 55 miles per hour. The highway is straight through this section as it travels east toward the City of Buckley. The first major intersections in this segment are encountered at the offset intersection approaches of 233rd and 234th Avenues East. These intersections are spaced approximately 200 feet apart at mileposts 16.81 and 16.85. The next county road intersections are located at mileposts 18.10 and 18.61. These are 254th Avenue East and 262nd Avenue East. A truck weigh station is located along this two lane highway for eastbound trucks at milepost 18.45.

City of Buckley

At the intersection of Mundy-Loss Road, milepost 19.62, SR 410 enters the City of Buckley. The highway speed limit is reduced from 55 to 45 miles per hour in this vicinity. Continuing east, as SR 410 nears the intersection with Hinkleman Extension Road the speed limit is further reduced to 35 miles per hour and a center two-way left-turn lane begins. This three-lane roadway continues for approximately one quarter mile to the intersection with State Route 165, at milepost 20.7. At this junction SR 410 curves North and continues to the northeast as a two-lane highway. Several city street intersections are encountered in the next three quarters of a mile, most of which have been provided with left turn channelization on SR 410. These are either three-way or four-way intersections and they include Jefferson Avenue, Third Street, Mason Avenue, Main Street, and Park Avenue. Presently only Main Street at milepost 21.14 has a signal controlling traffic flow. State route 410 continues northeast beyond Park Avenue as a two-lane highway to the Pierce/King County line at milepost 21.99. In this mile, the highway crosses two waterways; the Puget Sound Power and Light Company Canal, which supplies Lake Tapps, and the White River Bridge at the county line. The highway enters King County (the WSDOT Northwest Region) at the White River Bridge at milepost 21.99. At this point this SR 410 Route Development

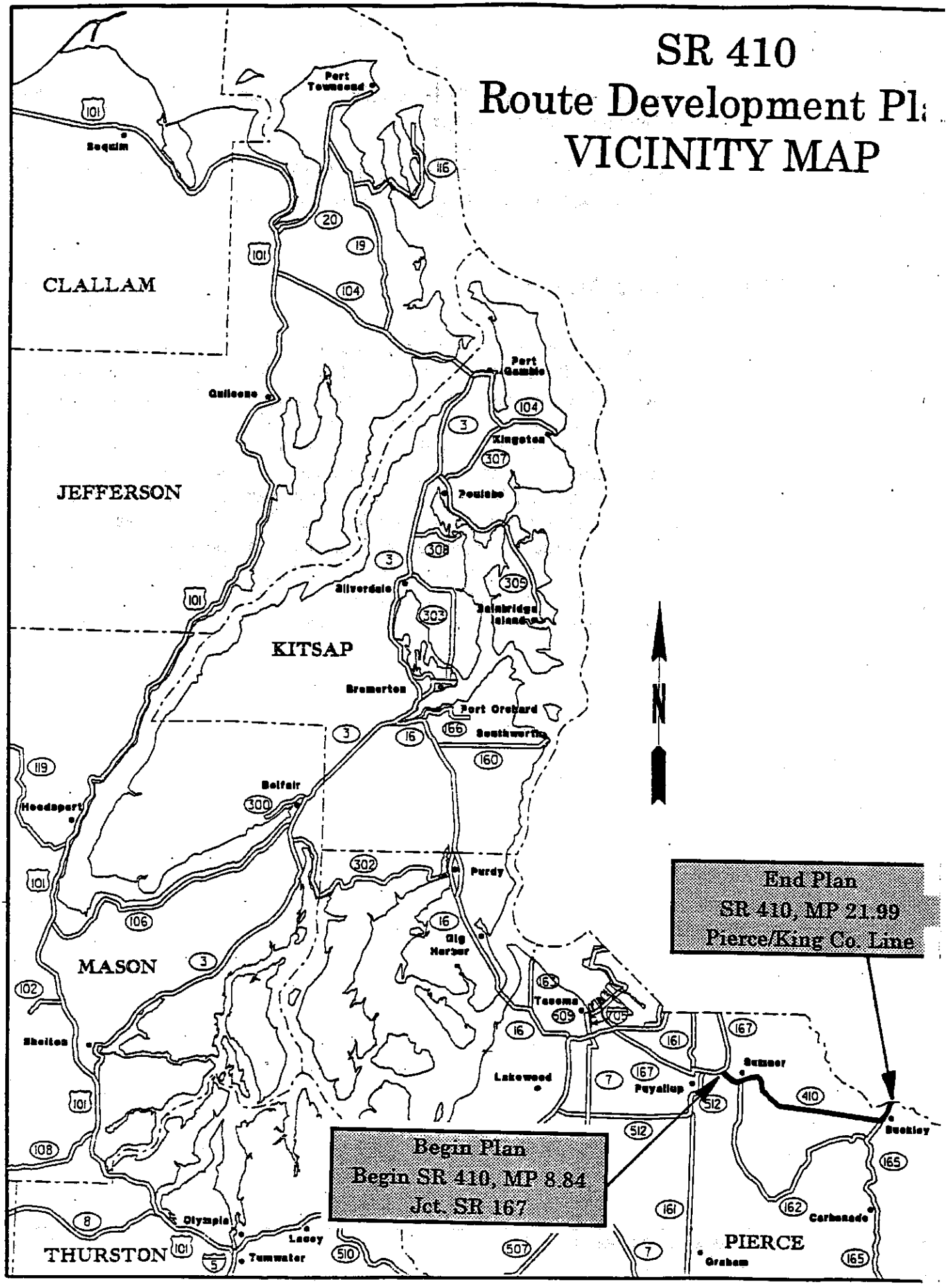
terminates. From here SR 410 continues to in a northeasterly direction to the City of Enumclaw, at milepost 22.77.

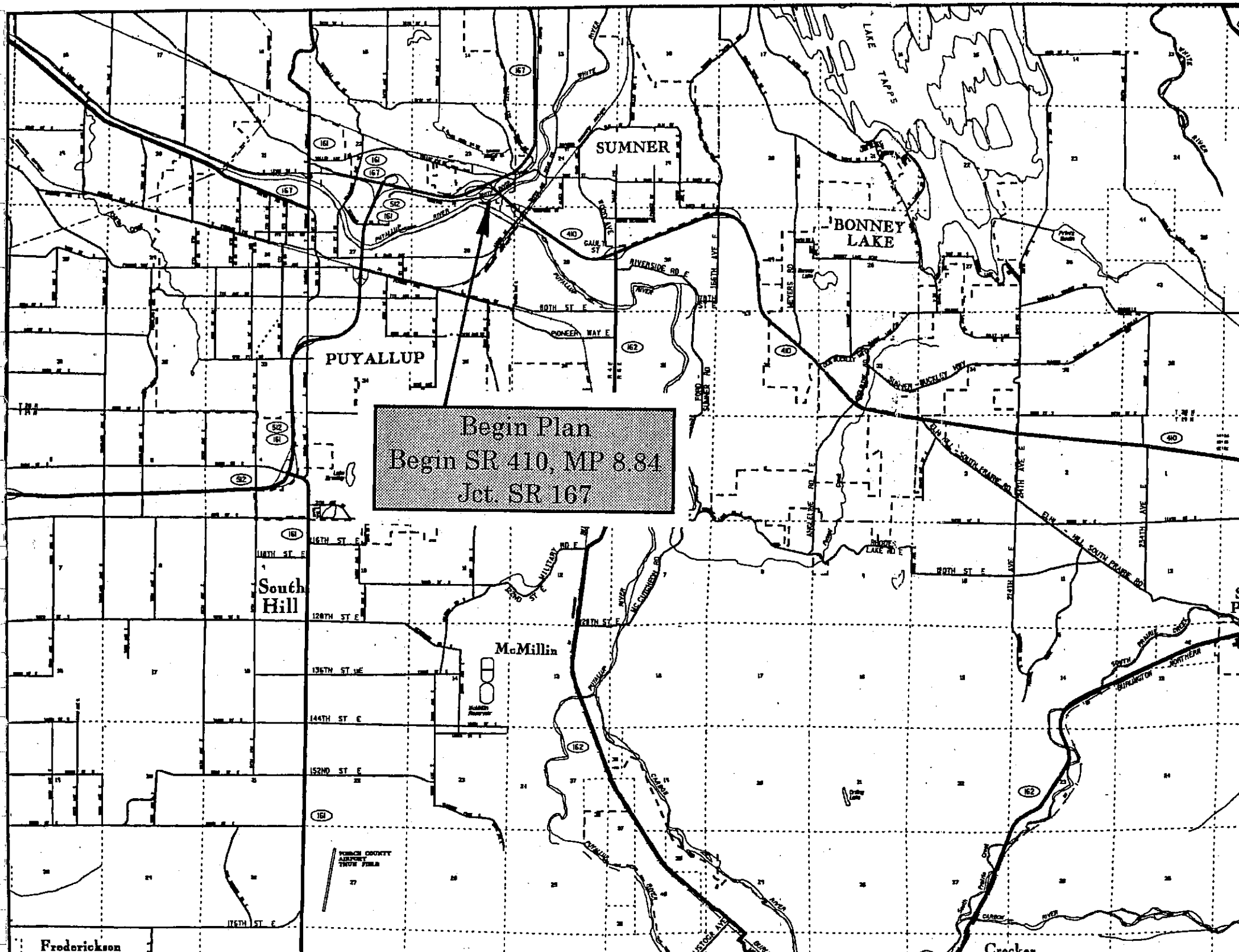
SR 410 ultimately terminates at milepost 116.45, approximately 15 miles west of Yakima, near Naches, Washington, in Yakima County.

1.2 Character of Traffic

SR 410 provides a major east-west transportation corridor for local and regional traffic traveling between the Cities of Tacoma, Puyallup, Sumner , Bonney Lake, Buckley, and Enumclaw. The majority of vehicles traveling on SR 410 are commuters. The development growth rate along this corridor is relatively high in the Cities of Bonney Lake and Buckley, and traffic volumes are anticipated to continue to grow at a steady rate. More highway improvements will be needed as more developments such as shopping centers, service centers, manufacturing, single and multi-family residences and highway oriented businesses are built in the future. The route is also used for recreational travel, such as providing indirect connections to destinations like Mount Rainier National Park and points east. Truck traffic uses this east-west corridor for movement of freight and goods. However trucks are forbidden on Chinook Pass.

SR 410
Route Development Pl
VICINITY MAP




Begin Plan
Begin SR 410, MP 8.84
Jct. SR 167
SUMNER
BONNEY LAKE
PUYALLUP
South Hill
McMillin
Frederickson
Crocker
LAKE TAPPS
SOUTH PRAIRIE RD E
SOUTH BURLINGTON NORTHERN
PIERCE COUNTY AIRPORT THUN FIELD

1.3 The Local Urban Network and Related Facilities

State Route 410 is a major east-west route in the north central Pierce County regional network of roads. This highway provides a link from as far east as SR 12 near Yakima, to the Tacoma Urbanized area in the Puget Sound region. This connectivity is vital for efficient and direct transportation to the cities of Enumclaw, Buckley, Bonney lake, and Sumner. State Route 164 in Enumclaw is very similar to SR 410 in that it provides a parallel transportation facility north of SR 410 through King County. To the south of SR 410 lies SR 162. This route mainly serves traffic traveling in a north-south pattern from the City of Orting to SR 410 in the City of Sumner. To the Southwest of SR 410 also lies SR 161 which influences SR 410 traffic. Most of these state routes also provide connections to major freeways such as SR 512, SR 167, SR 18, and Interstate 5. All of these routes are increasingly experiencing higher levels of traffic.

In addition to the network of state highways, there are many city and county roads in this region. Other local roadway connections and improvements to existing local arterials are vital to provide travel choices within Pierce County, and to offset the high demand for increased capacity on SR 410.

The following is a brief inventory of some of Pierce County's plans to improve existing routes. This information was obtained from the *Pierce County Transportation Plan*, September 1992.

- **Improvements to South Prairie Road, 112th St. E, and Rhodes Lake Road to 98th Street East.** These improvements would help provide for improved east-west travel south of SR 410.

- **Improvements and the construction of new facilities to: Sumner Buckley Hwy. and the Lake Tapps Highway.**

- **Intersection Improvements to: Myers Road East, 214th Avenue East, 254th Avenue East, and Mundy-Loss Road.**

- **Improvements to north-south links including the East Valley Highway and Angeline Road.**

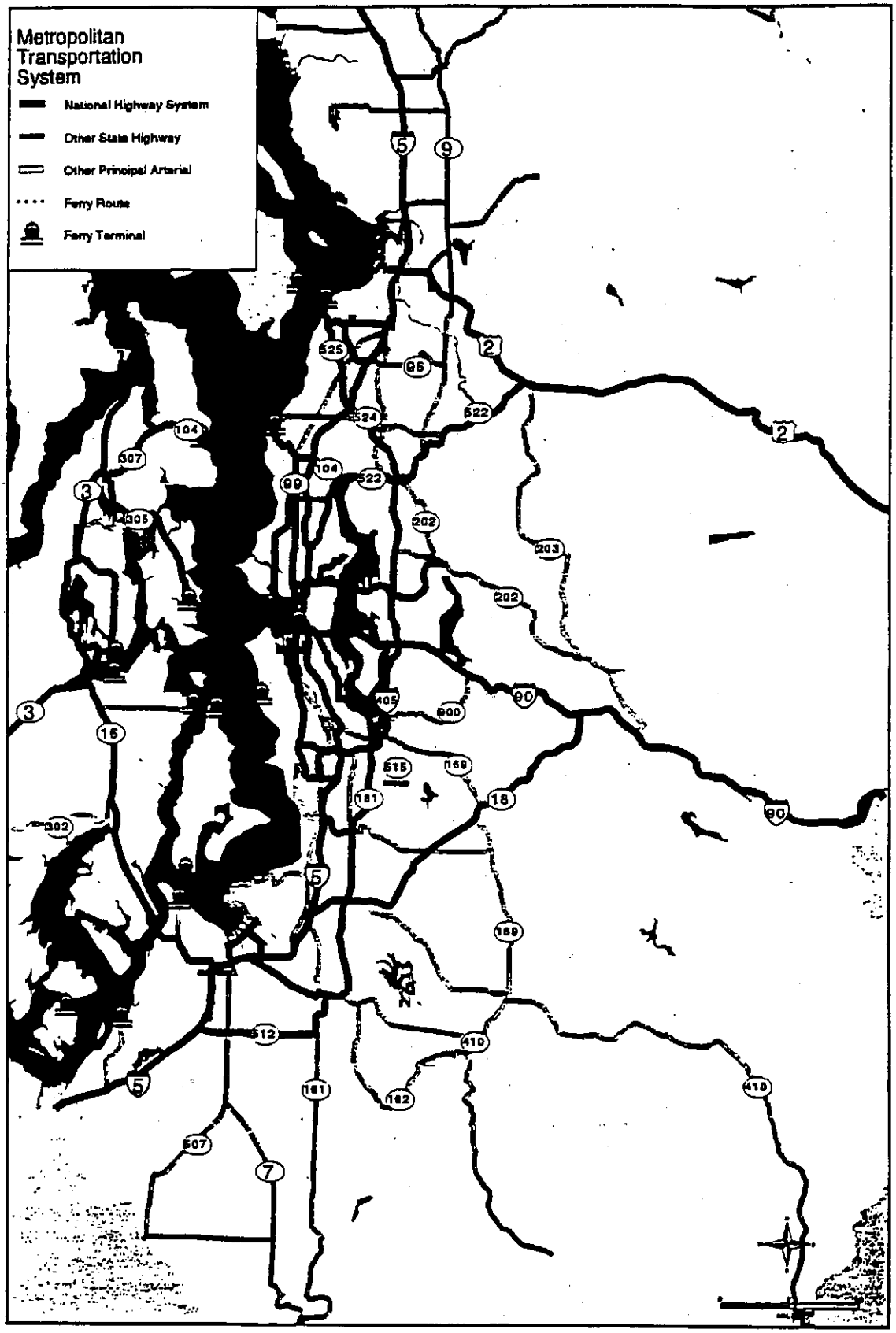
- **Shaw Road East** - This proposed project includes improvement to the existing facility, a new arterial from Pioneer Way E to Main Avenue E, and establishment of an arterial corridor from SR 410 to Orting-Kapowsin Highway East. This project is classified by the County as a premier priority project.

- **The planned 176th Street East** easterly extension from SR 161 to the City of Orting, if constructed, will likely offset travel demands on SR 161 and SR 410. This improvement would provide a much needed east-west connection in this region.

1.4 Metropolitan Transportation System

The map on the following page is taken from the Puget Sound Regional Council's *Metropolitan Transportation Plan*, dated May, 1995. It depicts the significant highways in the region's current Metropolitan Transportation System (MTS). The MTS is comprised of regionally significant infrastructure and services which serve regional transportation functions. It can be seen from the map that SR 410, identified as "Other State Highway", does provide an important link of regional significance. The MTS includes both transportation facilities and services which provide regionally significant travel opportunities to facilitate access to locations and activities crucial to the social and economic health of the central Puget Sound region.

Freeway, Other State Highway, Arterial and Ferry Components – Existing System



Source: Puget Sound Regional Council

1.5 Route Classifications

Federal Functional Classifications

According to the *Functional Classification of Public Roads National Classifications Map, March 1993*, within the study limits of this Route Development Plan, State Route 410 has several Federal functional classifications.

Specifically SR 410 is classified as "Other Freeway or Expressway" from its beginning at milepost 8.84, in the City of Sumner to milepost 13.02, in the City of Bonney Lake. From milepost 13.02, SR 410 continues east with the designation of "Minor Arterial, Urban" to milepost 15.61, at 214th Street East. This location presently represents the City of Bonney Lake's east city limit and is also the present terminus of the Tacoma Urbanized Area. Traveling east from milepost 15.61, the highway is identified as a "Minor Arterial, Rural", due to the Rural Area designation. The "Minor Arterial, Rural" classification continues through Pierce County and the City of Buckley to milepost 21.99 at the Pierce/King County line, the terminus of this Route Development Plan.

This route development plan recommends no change to the functional classifications identified in the *Functional Classification of Public Roads National Classifications Map, March 1993.*

State Functional Class

In the State Functional Class system, SR 410 is classified as an Urban-Minor Arterial from its beginning to MP 15.60. From MP 15.60 to the end of SR 410, the route is classified as a Rural-Minor Arterial.

National Highway System Status

According to the *National Highway System Proposed Routes Map, April 1993,* SR 410 is not included in the National Highway System.

Scenic and Recreational Highway System Status

SR 410 is not presently designated by WSDOT as one of Washington State's Scenic and Recreational Highways.

Freight and Goods Transportation System Status

SR 410 is presently identified as a "T1" route in the Statewide Freight and Goods Transportation System, meaning that over 10,000,000 freight tons are transported over this route annually.

The Washington State Transportation Commission was directed by the 1993 Legislature to identify and designate a freight and goods transportation system (FGTS).

The FGTS was developed in cooperation with cities, counties, and regional transportation organizations. The present system consists of 6,600 miles of state highways, 9,100 miles of county roads, and 900 miles of city streets. Overall, 94 percent of the state highways, 22 percent of county roads, and 8 percent of city streets are on the system. Roads on the FGTS have designated classifications ranging from "T1" to "T5". Routes with a "T1" designation carry the most annual freight tonnage (over 10,000,000 tons) and "T5" routes carry the least annual tonnage (equivalent to 100,000 tons per year).

While the FGTS is in essence a current inventory, the system is dynamic and periodic reviews and revisions will be needed. The forces of economic growth and change can bring about a need to add or delete routes or to change route tonnage classifications.

Roadside Classification Plan

This class system refers to the roadside of the state route. The roadside encompasses the area between the roadway pavement edge and right-of-way boundaries. Roadside character is a description of the roadside landscape from the roadway user's perspective. It describes what you see along the road as you travel it. The following sections of SR 410 are shown with their existing class of roadside.

Milepost	Character Classification
8.84 to 15.14	RURAL
15.14 to 15.84	SEMIURBAN - Bonney Lake
15.84 to 20.34	RURAL
20.34 to 21.44	SEMIURBAN - Buckley
21.44 to 22.44	FOREST

Refer to Section 1.10 for additional information on the *WSDOT Roadside Classification Plan.*

Access Management Plan Classifications

Access management is a technique for protecting the carrying capacity of highways and improving safety. It accomplishes these goals by minimizing disruptions to through traffic by eliminating unnecessary driveways and spacing them apart, managing the roadway median, spacing traffic signals, and managing turning traffic, as well as including other measures.

The steering committee members for this Route Development Plan understand the present *Access Management Plan* (AMP) classifications, its associated typical restrictions, and the importance of practical access management for SR 410.

The Steering Committee recommended changes to some of the present access management classifications. These changes are due to highway character such as speed limit, existing road approaches and land uses.

Table 1.5-1 summarizes the existing and proposed *Access Management Plan* classifications for State Route 410.

Table 1.5-1:
SR 410 WSDOT Access Management Plan and Suggested Revisions
(SR 167 Interchange to Pierce/King County Line)

Section Description	Length (miles)	Access Classification	Speed Limit	Land Use	Recommended Class Changes
Jct. SR 167 I/C to Vic. 166th St E I/C (MP 8.84 to MP 11.87)	3.03	Full Control	55/50	Rural / Res	**None**
Vic. 166th St E to Bonney Lake WCL (MP 11.87 to MP 12.72)	0.85	Class 2	50	Rural	**None**
Bonney Lake WCL to ECL (214th vic) (MP 12.72 to MP 15.36)	2.64	Class 3	40	Comm / Res	**None**
Bonney Lake ECL to Future ECL (214th Vic. to 234th Vic.) (MP 15.36 to MP 16.85)	1.49	Class 2	55	Commercial	**Future change to Class 3 if City annexes**
Bonney Lake Future ECL to Buckley WCL (234th St E to Mundy Loss Rd E) (MP 16.85 to MP 19.62)	2.77	Class 2	55	Res / Comm	**None**
Buckley WCL to Hinkleman Extension Rd (MP 19.62 to MP 20.41)	0.79	Class 2	55	Res / Comm	**City requests change to Class 3, and Speed Limit Reduction to 35mph**
Hinkleman Extension Rd to Vic PSPL Canal (MP 20.41 to MP 21.84)	1.43	Class 3	35	Res / Comm	**None**
Vic PSPL Co. Canal to King County Line (MP 21.84 to MP 21.99)	0.15	Class 2	40	Rural	**None**

Source: *WSDOT Access Management Plan.*

The following page provides a brief description of the characteristics of the five different access classifications in the *WSDOT Access Management Plan.*

For additional information regarding the *WSDOT Access Management Plan*, consult Chapter 468-52 of the Washington Administrative Code and Chapter 47.50 of the Revised Code of Washington.

ACCESS MANAGEMENT PLAN CLASSIFICATIONS
TYPICAL CHARACTERISTICS

CLASS 1 MULTILANE FACILITY

- High speed, high traffic volumes, long trips
- Median barrier typically used
- Planned intersection spacing = 1 mile
- Minimum private connection spacing = 1320 feet
- Private direct access to the state highway shall not be allowed except when the property has no other reasonable access to the general street system.

CLASS 2 MULTILANE FACILITY

- Medium to high speeds, medium to high traffic volumes, medium to long trips
- Median barrier typically used
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 660 feet
- Private direct access to the state highway shall not be allowed except when the property has no other reasonable access to the general street system.

CLASS 3 MULTILANE FACILITY

- Moderate speeds, moderate traffic volumes, short trips
- Balance between land access and mobility
- Median constructed of curbed asphalt or landscaped traffic islands. A center two-way left-turn lane may be used as special conditions warrant.
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 330 feet

CLASS 4 MULTILANE FACILITY

- Moderate speeds, moderate traffic volumes, short trips
- Balance between land access and mobility
- Two way left turn lane is used
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 250 feet

CLASS 5 MULTILANE FACILITY

- Low to moderate speeds, moderate to high traffic volumes, short trips
- Highest service to land access
- Planned intersection spacing = 1/4 mile
- Minimum private connection spacing = 125 feet

1.6 Existing Right-of-Way

The existing right-of-way for State Route 410 is presented in Table 1.6-1 below and is subject to change.

Table 1.6-1: SR 410 Existing Right-of-Way

Section Description	R/W Left of centerline (feet)	R/W Right of centerline (feet)
MP 8.95 to MP 9.01	142 to 115	108 to 115
MP 9.01 to MP 9.08	70	70
MP 9.08 to MP 9.17	110	100 to 130
Linden Drive Vic MP 9.18 to MP 9.31	110 to 470	130 to 350
Linden Drive, City of Sumner MP 9.31 to MP 9.33	60' RW for the xing city rd.	
RR xing MP 9.33 to MP 9.35	60	50
RR xing to MP 10.06	110	110
MP 10.06 to MP 10.20	140	110
SR 162 Interchange Vicinity MP 10.20 to MP 10.40	140 to 370	110 to 350
MP 10.40 to MP 10.59	114 to 370	110 to 350
MP 10.59 to MP 11.09	110	110
East of 166th Ave E Interchange MP 11.09 to MP 11.28	170	130
166th Ave E Interchange vic. MP 11.28 to MP 11.47	170 to 190	130 to 280
West of 166th Ave E I/C MP 11.47 to MP 11.81	130 to 190	180 to 280
West of 166th Ave E I/C to vic 171 Ave MP 11.81 to MP 12.22	100 to 300	50 to 200
171 Ave to Myers Rd MP 12.22 to MP 13.11	80 to 250	50 to 220
Myers Rd to Sumner Buckley Hwy MP 13.11 to 13.37	80 to 120	60 to 170
Sumner Buckley Highway to 184th Ave MP 13.37 to MP 13.60	60	60 to 130
184th Ave Vic to Angeline Rd Vic MP 13.60 to MP 13.89	60 to 149	90 to 130
Angeline Road to 192nd Ave Vic MP 13.89 to MP 14.20	50 to 149	90 to 110

Source: WSDOT ROW Plans

Table 1.6-1 (cont.): SR 410 Existing Right-of-Way

Section Description	R/W Left of centerline (feet)	R/W Right of centerline (feet)
192nd Ave to 198th Ave E MP 14.20 to 14.63	50 to 140	70 to 110
198th Ave to 211th Ave E MP 14.63 to 15.39	50 to 70	80 to 100
211th Ave E to 214th Ave E MP 15.39 to MP 15.60	70 to 80	60 to 100
214th Ave to Vic 221st Ave S MP 15.60 to 16.04	60 to 120	50 to 100
221st Ave to the SR 165 I/S MP 16.04 to MP 20.66	50	50
SR 165 I/S to 3rd St MP 20.66 to MP 20.95	75	40 to 140
3rd St to Mason Ave MP 20.95 to MP 21.05	60	40
Mason Ave to after Main St MP 21.05 to MP 21.17	30	40
Vic After Main St MP 21.17 to MP 21.27	60	40
MP 21.27 to Park Ave. MP 21.27 to MP 21.58	60 to 80	40 to 110
Park Ave. to White River Bridge MP 21.58 to MP 21.99	75 to 110	75 to 110

Source: WSDOT ROW Plans

1.7 Existing Surface Geometrics

Information regarding the configuration of existing lanes and shoulders is provided in the following tables. Descriptions include dimensions of lanes, medians, shoulders, and sidewalks and lane functions such as through lanes, passing or climbing, two-way left-turn lane (TWLTL), etc. Presently there are no High Occupancy Vehicle (HOV) lanes established on SR 410. Milepost locations are used to identify where significant changes occur, such as the number of existing lanes, or where any other significant change in the geometry occurs. The information is presented to represent the conditions along SR 410 in a general sense. For a thorough listing of all geometric conditions, refer to the most current *WSDOT State Highway Log*.

Table 1.7-1:
SR 410 Existing Surface Geometrics
SR 167 Interchange to Vicinity Bonney Lake

Section Description	Traffic Lanes (number of, type & dimensions)	Shoulders & Sidewalks (dimensions)	Median Treatment
SR 167 I/C Vic. to Linden Drive I/C Vic. MP 8.84 Vic. to MP 9.11 Vic.	**Eastbound:** 2 @ 12' through lanes from SB SR 167 1 @ 12' auxiliary add/drop lane from NB SR 167 to Linden Dr. **Westbound:** 2 @ 12' through lanes merge with SB SR 167 1 @ 14' auxiliary add/drop lane from Linden Dr. to NB SR 167	**Eastbound:** 4' paved inside shoulder 8' to 10' paved outside shoulder **Westbound:** 8' paved inside shoulder 10' paved outside shoulder	Varied width of median between interchanges. Opposing directions of travel divided by 1. soil median 2. Jersey face barrier on structure over White River 3. Jersey face barrier on 20' wide asphalt surface median.
Vic. Linden Drive I/C to Vic SR 162 I/C MP 9.11 Vic to MP 10.40	2 @ 12' through lanes each direction	4' inside & 10' outside paved shoulders	Median varies: Jersey face barrier on asphalt surface or soil depressed median.
Vic SR 162 I/C to Vic 166th St E I/C MP 10.40 to MP 11.95	2 @ 12' through lanes each direction	4' inside & 10' outside paved shoulders	Median varies: Soil depressed median or asphalt median with Jersey barrier.
Vic 166th St E I/C to Vic. Myers Rd E MP 11.95 to MP 13.05 Vic.	2 @ 11' through lanes each direction	4' inside & 8' outside paved shoulders	Jersey barrier

Table 1.7-2:
SR 410 Existing Surface Geometrics
Bonney Lake Vicinity to the White River Bridge

Section Description	Traffic Lanes (number of, type & dimensions)	Shoulders & Sidewalks (dimensions)	Median Treatment
Myers Road "Y" Connection to 184th Ave. "Y" connection Vic. MP 13.08 to MP 13.54	4 @ 11' through lanes, Begin 12' TWLTL near MP 13.43	Varies, 4' & 8' paved shoulders on left & right shoulders	none
184th Ave. "Y" connection Vic. MP 13.54 to MP 13.65	4 @ 12' through lanes,	5' left & 8' right paved shoulders	none
184th Ave. "Y" connection Vic. to Angeline road MP 13.65 to MP 14.18	2 @ 12' through lanes & 2 @ 11' through lanes that begin at MP 14.02	8' paved shoulders on left and 10' to 14' paved shoulders on the right	Primarily 14' paved median with Jersey Barrier
Angeline road to 214th Ave. East MP 14.18 to MP 15.60	4 @ 11' through lanes	8' paved shoulders on left and right sides	12' Asphalt flush median to MP 14.72, 11' paved median with Jersey Barrier from MP 14.72 to MP 15.06, 12' Asphalt flush median from MP 15.06 to MP 15.60
214th Ave. East Vicinity MP 15.60 to MP 15.80	4 11' through lanes transitioning to 2 @ 11' through lanes	8' paved shoulders on left, 10' paved shoulders on right	no median
214th Ave. East Vicinity to Hinkleman Extension road vicinity MP 15.80 to MP 20.57	2 @ 11' through lane	8' paved shoulders on left and right	no median
Hinkleman Extension road vicinity to SR 165 Wye Connection MP 20.57 to MP 20.73	2 @ 12' through lane, TWLTL	8' paved shoulders on left and right to MP 20.73	no median
SR 165 Wye Connection to White River Bridge MP 20.73 to MP 21.99	2 @ 12' through lane	Varies, 4' to 9' paved shoulders on both sides	no median

Source: *WSDOT State Highway Log, 1996*

1.8 Bridge and Structure Inventory

Table 1.8-1 shows the bridge statistics for along this corridor. This table inventories the bridges between SR 167 Interchange and the Pierce/King County line. This information was obtained from WSDOT Bridge and Structures Office.

Table 1.8-1:
SR 410 Bridge and Structure Inventory
SR 167 Interchange to Pierce/King County Line

Bridge Number Bridge Name Mile Post	Span Type	Length (feet)	Width (feet)	Year Built (rebuilt)	System Plan Description*
410 / 31 White River (Stuck R.) MP 8.99	PCB CBOX	442	104	1971	Seismic-Super/Substr
410 /32 Linden Drive UC MP 9.32	PCB	218	28	1967	Seismic-Substr.
410 /33 BN RR UC (NP) MP 9.35	SB	102		1967	
162 / 2 SR 162 UC MP 10.42 (SR 162 MP 0.01)	PCB	238	42	1967 (1992)	Seismic-Super/Substr
410 / 39S Wahle Road OC MP 11.46	PCB	95	38	1983	
410 / 39N Wahle Road OC MP 11.46	PCB	147	38	1968	Seismic-Substr.
410 / 42 Angeline Road OC MP 13.89	PCB	106	40	1983	
410 / 48 PSPL CO Canal MP 21.80	CTB	116	28	1949	Paint Bridge

*System Plan Data Received from WSDOT Bridge and Structures Office, Bridge Planning and Technology Section, 5/24/95. Bridge System Plan Descriptions subject to change.

1.9 Existing Horizontal and Vertical Alignment

Using the data from the WSDOT TRIPS system, the horizontal and vertical alignments of the subject area of this RDP were examined. The vertical alignment grades range from level to 5.50%. The existing vertical curve lengths range from a minimum of 100 feet to a maximum of 2300 feet.

For the horizontal alignment, the curve radii range from 573 feet to 7640 feet, with the lengths of curves ranging from 186 feet to 1836 feet.

1.10 Terrain and Roadside Character

Terrain

According to the *WSDOT State Highway Log, 1996*, SR 410 runs through a level terrain in the Sumner vicinity, from SR 167 interchange at MP 8.84 to 166th Avenue East Bridge at milepost 11.49. The route continues through a rolling terrain until the Pierce/King County Line at milepost 21.99 in the vicinity of White River Bridge.

Roadside Character

The *roadside* encompasses the area between the roadway pavement edge and right-of-way boundaries. Roadside character is a description of the roadside landscape from the roadway user's perspective. The *WSDOT Roadside Classification Plan* (*RCP*) has been created to coordinate and guide the management of Washington State highway roadsides, including planning, design , construction, and maintenance activities. It is WSDOT policy to put roadside treatments to use for the protection and restoration of roadside character and to incorporate the *RCP* into regional and route specific planning, design, construction, and maintenance programs. The goals of the *RCP* are:

- Promote transportation safety and management efficiency.
- Minimize environmental and social impacts of transportation facility construction and maintenance.
- Facilitate protection and restoration of Washington's natural environment and cultural heritage within state highway roadsides.
- Promote cooperation and communication in roadside management.

The objectives for each goal are found in *WSDOT Roadside Classification Plan.*

The table below shows the roadside classification by segments for SR 410, within the subject of study.

Table 1.10-1: WSDOT Roadside Classification for SR 410

Milepost	Character Classification
8.84 to 15.14	RURAL
15.14 to 15.84	SEMIURBAN - Bonney Lake
15.84 to 20.34	RURAL
20.34 to 21.44	SEMIURBAN - Buckley
21.44 to 22.44	FOREST

Source: *WSDOT Roadside Classification Plan 1996.*

1.11 Existing Traffic Signals

The following tables provide information relating to existing traffic signals on SR 410. The tables also identify existing public street intersections. Traffic Signals are further discussed in Chapter 3 of this Plan. In that Chapter these table are presented again, with additional information regarding proposed "candidate" traffic signal locations.

Table 1.11-1: Existing Traffic Signal Locations

Intersecting Street Name	Left Right Both	Highway Milepost	Speed Limit (MPH)	Distance to Next Signal (miles)
Sumner Buckley Hwy (Lt)/ 181st Ave E (Rt)	B	13.37	45	0.23
184th Ave E	B	13.60	45	0.59
192nd Ave E	R	14.19	45	0.21
195th Ave E	B	14.40	45	0.24
198th Ave E (LT) / South Prairie Rd (Rt)	B	14.64	45	0.53
208th Ave E	B	15.17	45	0.22
211th Ave E	R	15.39	45	0.21
214th Ave E	B	15.60	55	5.54
Main St.	B	21.14	35	

2.1 Traffic Data Collection and Analysis

The traffic volumes used for this study were taken from the actual counts gathered by the WSDOT Olympic Regions Traffic Office in 1994 and 1995 and the *WSDOT Annual Traffic Report*. These values represent a "snapshot in time" of traffic data, used in this study to determine existing and future volumes. The average daily traffic (ADT) volumes on highway segments and the peak hour turning movement volumes at intersections were analyzed. The ADT is the volume of traffic passing a point or segment of a highway, in both directions, during a period of time, divided by the number of days in the period and factored to represent an estimate of traffic volume for an average day of the year.

The *Highway Capacity Manual* software was utilized to analyze traffic operations of highway segments and unsignalized intersections. In addition, the *SYNCHRO Traffic Signal Timing* software was utilized to analyze traffic operations of signalized intersections. In the analysis of highway segments, the traffic volume needed is the design hour volume (DHV) which is calculated by multiplying the ADT by the percentage of ADT occurring in the peak hour (K). The K values are taken from the *WSDOT State Highway System Plan* which utilizes the data furnished by the Traffic Data Office at Olympia Service Center. The values for the percentage of peak hour traffic in the heaviest direction of flow (D) and the truck percentages (T) were taken from actual counts.

The 1996 average daily traffic ranges from as low as 15,850 to as high as 51,950. Truck traffic percentage ranges from 3.2% to 14%. The highest ADT of 51,950 exists between SR 167 interchange and Linden Drive in Sumner. The lowest ADT of 15,850 occurs between 234th Avenue East and Hinkleman Extension Road containing the highest truck traffic of 14%. The lowest truck traffic of 3.2% occurs between SR 167 interchange and SR 162 interchange. The K values range from 8% to 9%, and the D values range from 52% to 68%.

The annual traffic growth rates, generated by Pierce County Public Works and Utilities using the EMME2 Traffic Model, range from 0.97% to 1.80%. An average growth rate of 1.50% was applied on the whole route to project the traffic volumes to the design year 2016 by annual compounding. The EMME2 Traffic Model is also an evolving source of information that changes

As growth in this region continues, this Plan will be updated as time and resources allow. Large proposed developments, such as Cascadia, near Bonney Lake, will have a great impact on the surrounding network of roads. As large developments, such as Cascadia, begin to move ahead, this Route Development Plan as well as other agency documents will need to be updated to reflect the substantial impacts to the region's transportation system that would occur.

2.2 Present Operating Conditions

Highway Segments

The highway capacity segment analysis was performed to determine the operational level of service of the existing traffic conditions on SR 410. Existing traffic conditions are based on 1994 and 1995 traffic counts. From SR 167 interchange to South Prairie Road East, traffic conditions operate at a level of service C (based on the highway segment analysis, see Table 2.3-1). The traffic operation is at level of service B from South Prairie Road to 214th Avenue East. To the east of 214th Avenue, the traffic operations drop to a level of service E up to Hinkleman Extension Road. From this location to the end of RDP study at the Pierce/King County Line, the traffic operation changes to level of service D.

Intersections

At the time of this analysis there were nine signalized intersections on SR 410 within the study limits of this Plan. Traffic operations of the signalized intersections were analyzed with exception to the Main Street intersection where traffic data was unavailable. The analysis shows that traffic conditions at 181st Avenue East/Sumner Buckley Highway intersection operate at a level of service F. The operational levels of service at the other signalized intersections are in the A to C range, see table 2.3-2.

2.3 Future Operating Conditions

Highway Segments

In the future traffic operations on SR 410 are expected to deteriorate as driver population increases and if no improvements are made to the highway or surrounding network of roads. The section of SR 410 from SR 167 interchange to South Prairie Road will likely operate at a level of service D in the future. However, throughout the city of Bonney Lake, the existing signalized intersections will actually control the operating level of service. The section from South Prairie Road to 214th Avenue will operate with a level

of service C. The rural section of SR 410 from 214th Avenue to the Pierce/King County Line will likely operate at a level of service E.

The Mobility Subprogram of the WSDOT State Highway System Plan states:

> "Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period level of service falls below Level of Service D. Provide uncongested conditions (Level of Service C) on rural highways."

Intersections

As shown in the Table 2.3-2 most of the signalized intersections will continue to operate at acceptable levels.

Table 2.3-1 highlights the present and future operating conditions of SR 410 as related to highway segments. This table identifies operating levels of service with and without improvements. Improvements are presented in Chapter 3.

Table 2.3-2 shows operating conditions of the existing signalized intersections along SR 410 for the years 1994 and 2016. The LOS's shown are for PM peak periods and represent an average LOS for each intersection. Specific legs of an intersection may actually operate at a better or worse condition that the average shown.

Table 2.3-1:
SR 410 Highway Segment Analysis Levels of Service
SR 167 Interchange to Pierce/King County Line

BEG MP	DESCRIPTION	END MP	1996 ADT	2016 ADT	1996 LOS	2016 LOS W/O IMPR.	2016 LOS With IMPR.
8.84	SR 167 I/C to Linden Dr	9.17	51950	69969	C	D	
9.17	Linden Dr to SR 162 I/C	10.26	44690	60191	C	D	C
10.26	SR 162 I/C to 166th Ave I/C	11.37	35625	47982	C	D	C
11.37	166th Ave I/C to 184th Ave East	13.57	36215	48776	C	D	C
13.57	184th Ave E to South Prairie Rd East	14.64	30320	40837	C	D	
14.64	South Prairie Rd East to 214th Ave East	15.60	26120	35180	B	C	
15.60	214th Ave East to 234th Ave East	16.85	17750	23907	E	E	B
16.85	234th Ave East to Hinkleman Extension Rd	20.40	15850	21348	E	E	B
20.40	Hinkleman Extension Rd to County Line	21.99	17550	23637	D	E	*

* *The operational levels of service of signalized intersections prevail through this section. See Chapter3 of this report for locations of proposed signals.*

Table 2.3-2:
SR 410 Present and Future Levels of Service
Existing Signalized Intersections
SR 167 Interchange to Pierce/King County Line

MILE POST	INTERSECTION AT SR 410	1994 LOS	2016 LOS
13.37	181st Avenue East/Sumner Buckley Highway	F	F
13.60	184th Avenue East	B	E
14.20	192nd Avenue East	B	B
14.40	195th Avenue East	B	C
14.64	198th Avenue East/South Prairie Road	B	B
15.17	208th Avenue East	B	B
15.39	211th Avenue East	A	B
15.60	214th Avenue East	C	D
21.14	Main Street	*	*

* *Traffic data unavailable.*

Several highway improvements and access management measures on SR 410 are proposed to mitigate the existing and future mobility and safety deficiencies. Detailed descriptions of the improvement proposals are discussed in Chapter 3 of this report.

2.4 Land Use and Zoning

The need for land use planning and regulation increases as the demand for housing, streets, commercial facilities, and public facilities grow. Limitations are placed on the use of land to minimize negative impacts to neighboring properties. Zoning regulates the locations of land uses. It is a means of assuring that land uses are compatible to one another. It allows for control of densities in each zoning category, with the purpose of providing adequate facilities for such categories. Zoning ordinances are established to prescribe setbacks and minimum lot sizes and provide techniques to preserve and protect environmentally sensitive areas. The land use plan is a basic part of the comprehensive plan which is an official statement of the county or city policy establishing the direction it will follow as it develops and changes.

Knowing adjacent land use zonings along SR 410, traffic generated by expected developments can be predicted. Land use zonings are taken into consideration when performing traffic modeling. The growth rates resulting from the EMME2 Traffic Model performed by Pierce County Public Works and Utilities reflect the proposed land use.

The proposed land use zonings for adjacent areas along SR 410 are shown on the following land use maps. These maps have been taken from the respective city or county comprehensive plans and are believed to be the most current to date at press time. This RDP will need to be revised in the future if land use designations change along SR 410.

As mentioned previously in this chapter, as growth in this region continues, this Plan will be updated as time and resources allow. Large proposed developments, such as Cascadia will have a great impact on the surrounding network of roads. As that development and others move ahead, this RDP as well as other agency documents will need to be updated to reflect the substantial impacts to the transportation network that would occur.

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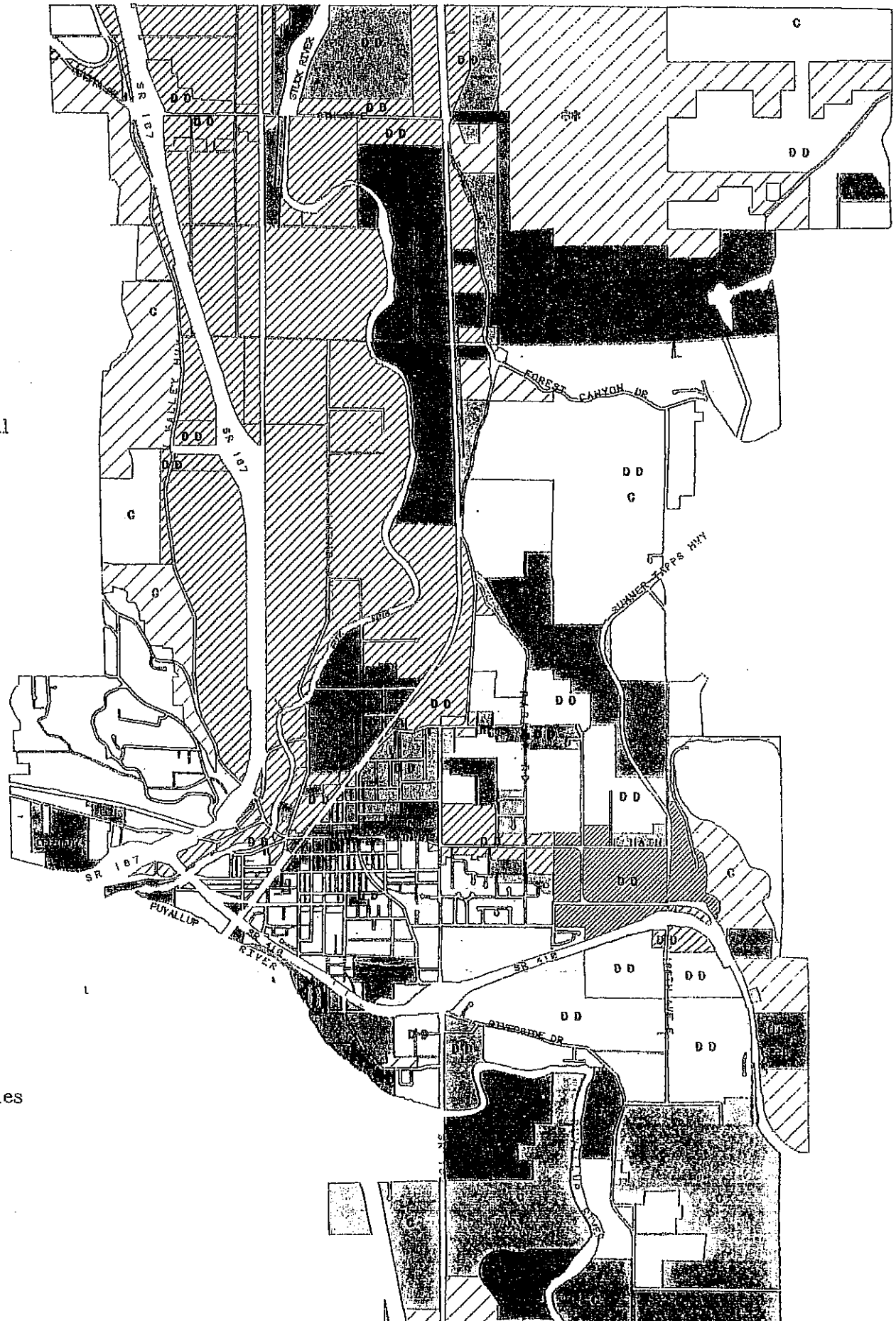

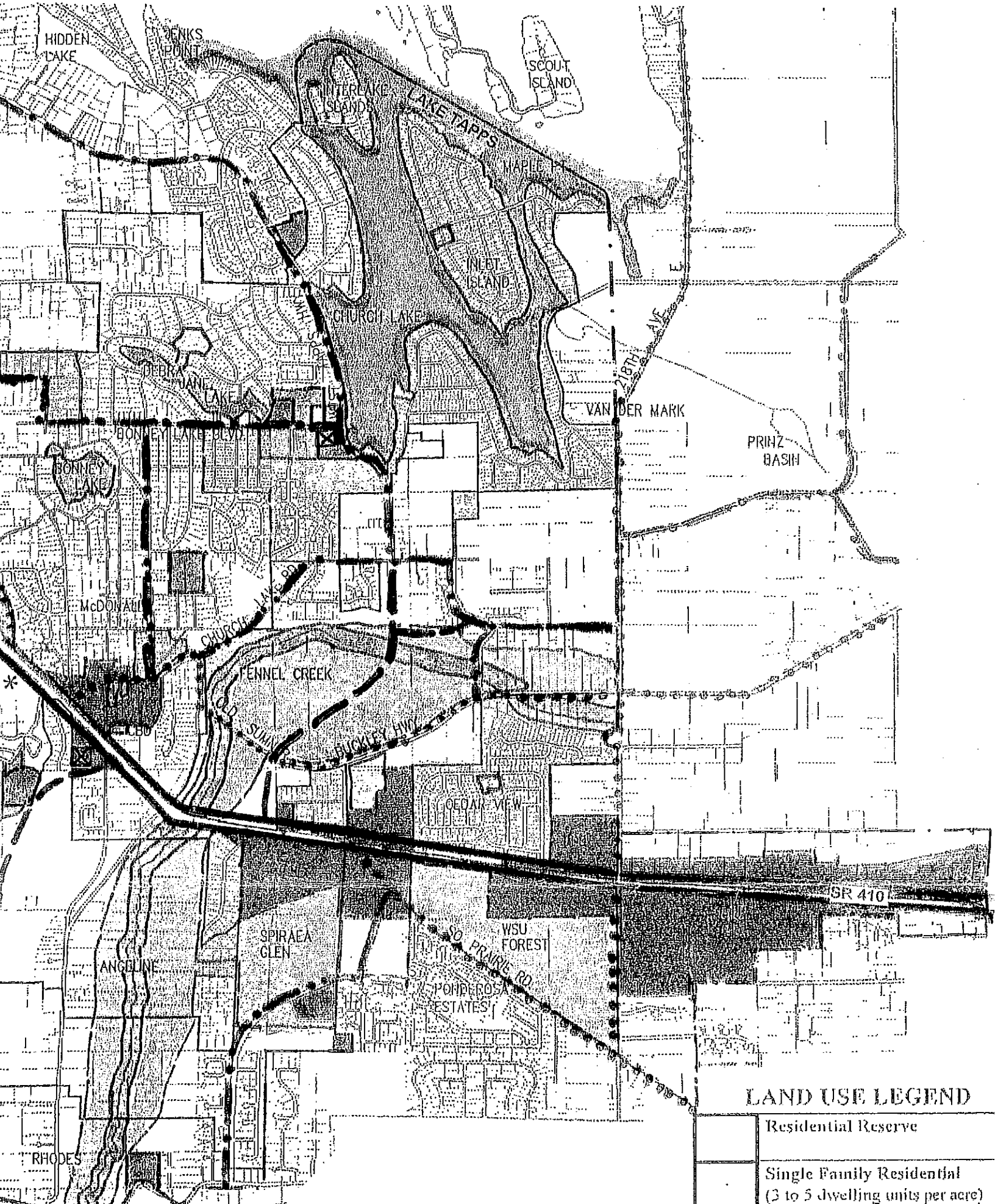
HIDDEN LAKE
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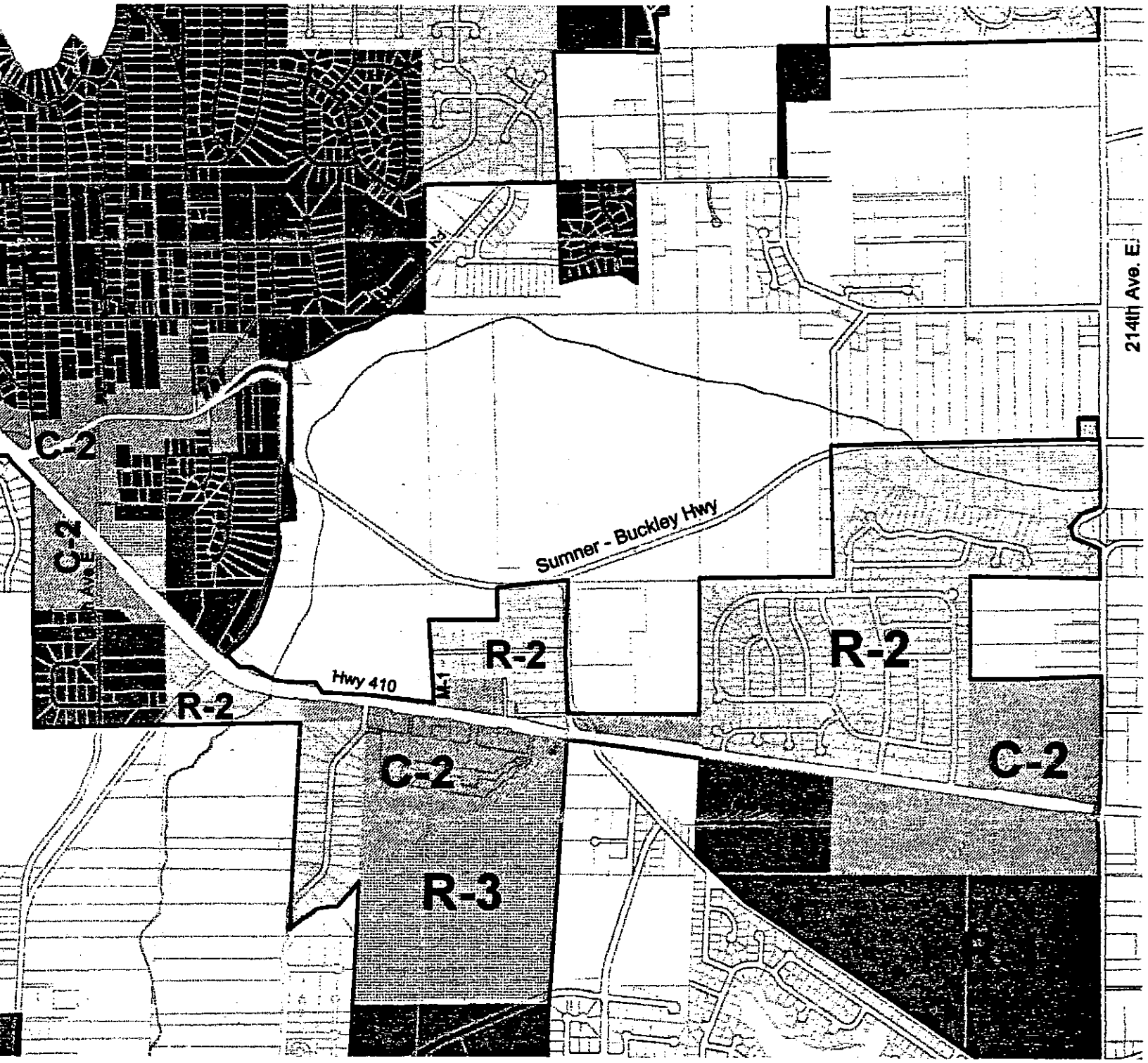
SCOUT ISLAND
LAKE TAPPS
MAPLE
INLET ISLAND
CHURCH LAKE
218TH AVE E
VAN DER MARK
PRINZ BASIN
DEBRA JANE LAKE
BONNEY LAKE BLVD
BONNEY LAKE
McDONALD
CHURCH LAKE RD
TENNEL CREEK
OLD SUMNER BUCKLEY HWY
CBD
CEDAR VIEW
SR 410
SPIRAEA GLEN
WSU FOREST
SO PRAIRIE RD
ANGELINE
PONDEROSA ESTATES
RHODES
LAND USE LEGEND
Residential Reserve
Single Family Residential
(3 to 5 dwelling units per acre)

CITY OF BONNEY LAKE



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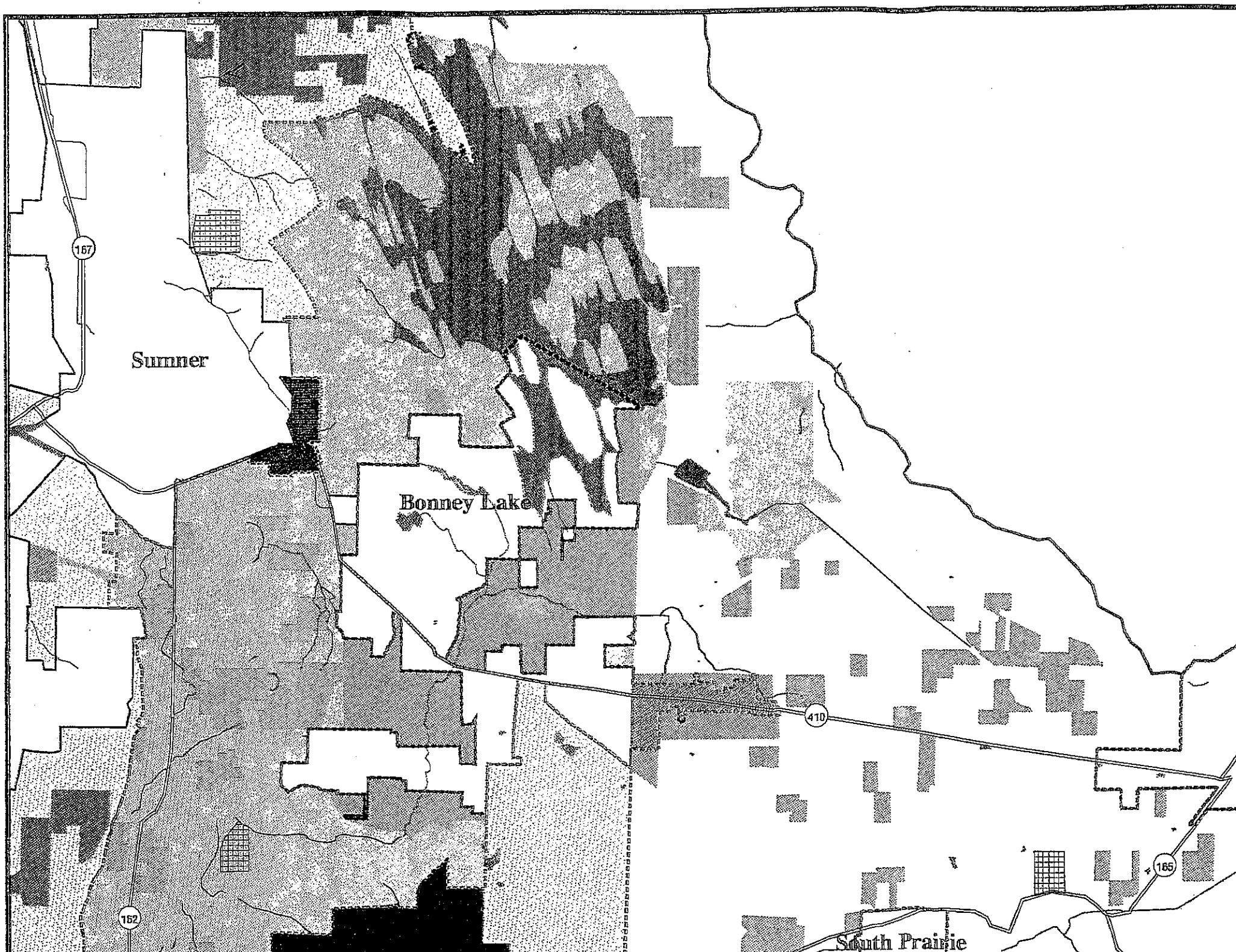

Sumner
Bonney Lake
167
410
162
165
South Prairie

3.1 Highway Improvement Recommendations

This Chapter of the SR 410 RDP presents a listing of Recommended Highway Improvements developed by the Steering Committee. They are presented by the following four route segments

- City of Sumner (Section 3.2)
- City of Bonney Lake (Section 3.3)
- Pierce County (Section 3.4)
- City of Buckley (Section 3.5)

Information regarding cost estimates and completion time frames for the recommended improvements is summarized in Appendix D of this RDP.

A public opinion survey of residences and businesses along the SR 410 corridor was conducted. The opinions of the local residents and businesses about the current conditions and potential improvements along SR 410 are highlighted in Appendix B and C of this RDP. In addition to the public opinion survey, public open houses and steering committee meetings provided valuable input to the decision making that went into the recommended highway improvements listed in this RDP.

Recommendations were arrived at after evaluating input from businesses in the area and local residents. Every effort was made to apply good engineering judgments to find improvement strategies to the issues and concerns raised by the public and in compliance with local plans. Strategies outlined in the *WSDOT State Highway System Plan* were evaluated.

These improvements are part of the WSDOT Highway Improvement Program, (see Appendix A of this RDP) and are presented in categories of Mobility , Safety, Economic, and Environmental Retrofit. The *Highway System Plan* will be modified and updated as needed after this Route Development Plan is approved.

Highway Safety

Highway safety is a very important issue for all state routes, and WSDOT addresses this issue throughout all programs, including such areas as Maintenance, Preservation, Improvements, and Traffic Operations.

Here are a few examples, taken from the *Highway System Plan*, of specific Service Objectives and Action Strategies that address Highway Safety:

Maintain state highways on a daily basis to ensure safe...movement of people and goods:

- Provide safe winter travel on highways that remain open to the public.
- Provide safe, reliable roadway surfaces through pavement patching, sealing, and surface treatments.
- Maintain visibility of traffic control and safety devices.
- Manage roadside vegetation to meet safety, aesthetic, and regulatory requirements.
- Keep existing structures safe and dependable.

Operate the highway transportation system safely and efficiently:

- Increase highway efficiency and safety through full utilization of the existing system.
- Improve arterial efficiency and safety through traffic signal timing and coordination efforts.
- Perform safety and efficiency investigations in response to constituent concerns to identify small cost operational enhancement opportunities.
- Develop and implement small cost, immediate solutions to address identified operational, safety, and efficiency concerns.

Preserve the highway infrastructure cost effectively to protect the public investment:

- Repave highways at regular intervals to minimize long-term costs. Restore existing safety features.

Provide the safest possible highways within available resources:

- Improve highway sections that have a high accident history.
- Improve roadways where geometrics, traffic volumes, and speed limits indicate a high accident potential.
- Eliminate major at-grade intersections on multi-lane highways with speed limits of 45 mph or higher.
- Construct intersection channelization, signals, or both when traffic volume warrants (thresholds) are met.

One function of the Route Development Planning process is to provide an opportunity for WSDOT staff to gather data that can support the various ways in which WSDOT addresses highway safety. The Route Development Plan does not make recommendations on specific highway safety improvements. That function is already provided within the WSDOT Program, in reference to the examples listed above, and through standards that are applied to many types of work that WSDOT performs on state highways. For specific highway safety improvement strategies currently identified over a 20-year projection on SR 410, please see the current *Highway System Plan.*

One specific safety recommendation that the Route Development Plan makes is on design speed. Design speed is defined as the maximum safe maintainable speed over a specific section of highway, when conditions are so favorable that the design features of the highway govern the maximum safe speed. Recommendations on design speed are based principally on terrain, type of highway, traffic volumes, as well as economic factors. Design speed will assist WSDOT in applying appropriate safety standards (for maintenance, preservation, improvements, traffic operations, etc.) such as vertical and horizontal alignment, and sight distance. Table 3.10-1 provides a listing of the recommended design speeds for SR 410.

Table 3.10-1: Recommended Highway Design Speeds SR 410 from SR 167 to King Co. Line

Highway Segment	Milepost to Milepost	Posted Speed Limit (mph)	Recommended Design Speed
SR 167 Interchange	83.84	55	55
SR 167 to 166th Ave. E.	8.87 to 11.67	55	70+
166th Ave. E. to 214th Ave. E.	11.67 to 15.60	45	50*
214th Ave. E. to Mundy-Loss Rd.	15.60 to 19.62	45-55	60+
Mundy-Loss Rd. to King Co.	19.62 to 21.99	35-40	40*

*Highway arterials that have street-like characteristics, operationally and physically, do not require a design speed determination. In such instances, closely spaced intersections and other operational constraints usually limit vehicular speeds, negating the design speed factor.

3.2 City of Sumner Vicinity Steering Committee Recommendations

Recommended Highway Mobility Improvements

- ***Highway Location: SR 167 I/C to 166th Ave. E. I/C***
  MP 8.84 to MP 11.46
  Section Length: 2.62 miles

Deficiency: Present peak period Level of Service is approximately at LOS C. This meets the desirable LOS D for Urban Areas. The steering members viewed the movements at the SR 167 Interchange as marginal; specifically the South SR 167 to East SR 410 movement.

Expected Level of Service Results: If the following proposed improvements to SR 410 are completed, the expected operating condition through this section of freeway to the planning horizon year 2016 would likely be LOS C.

Recommended Improvement:
The current *WSDOT State Highway System Plan* recommends construction of one High Occupancy Vehicle (HOV) Lane in each direction on SR 410 between the SR 167 and 166th Avenue East interchanges. The Route Development Plan Steering Committee concurred with this strategy for this 4-lane, divided freeway section of SR 410. With major developments such as Cascadia planned in this area, the future termination points for the HOV lanes could be extended to Angeline Road or another point east of 184th, depending on future growth. This improvement is likely years away, as HOV lanes on SR 167 and SR 512 freeways should first be completed. Ultimately an HOV to HOV connection should be made at the SR 167/SR 410 Interchange. The City of Sumner supports this HOV to HOV direct connection. The City has suggested that planning efforts should be undertaken now to ensure that there is adequate right-of-way space to accommodate this construction without impacting any public recreation areas. This RDP does not provide any concept of how such connections could be made at this trumpet interchange. The present interchange is bordered closely by two rivers, the surrounding city network of roadways, and two railroad tracks, presenting an engineering challenge to future design staff.

In addition to HOV lanes, the present *WSDOT State Highway System Plan* also recommends ITS (Intelligent Transportation System) and Enhanced Transit as part of a long term solution to offset the increased demand for additional travel lanes. The RDP Steering Committee agrees that this is a viable recommendation and they support this as well. The ITS concepts include traffic surveillance systems such as mounting cameras along transportation corridors and placing traffic sensors in highway pavements to

allow improved incidence response. ITS also focuses on Advanced Traveler Information Systems (ATIS) which uses other technologies such as GPS and GIS to provide pre-trip and in-vehicle information to motorists on current traffic conditions and real-time guidance on route alternatives.

- ***Highway Location: 166th Ave. E. I/C to 184th Ave. E.***
  MP 11.46 to MP 13.6 Vic.
  Section Length: 2.14 miles

Deficiency: Present peak period Level of Service is approximately at LOS C. This meets the desirable LOS D for Urban Areas.

Expected Level of Service Results: If the following proposed improvement to SR 410 is constructed, the expected operating condition through this section of freeway to the planning horizon year 2016 would likely be LOS C.

Recommended Improvement:
This recommendation is presently not contained in the *WSDOT State Highway System Plan*: This section of SR 410 is not identified in the present *State Highway System Plan* to receive HOV lanes. The RDP Steering Committee discussed this in detail and decided to recommend that HOV lanes be constructed beyond the 166th Avenue East Interchange to the vicinity of 184th. All of the improvements listed for the previous section of SR 410 would apply.

Project Justification and Summary of Steering Committee Discussions:
Justifications to construct HOV lanes east to 184th Street East include the following:

- The RDP steering committee concurred that HOV lanes would better serve the Cities of Sumner and Bonney Lake if they were ultimately extended further east, into Bonney Lake, to 184th Street East. At this location the City of Bonney Lake and Pierce Transit have long term plans for a park and ride lot. This location at 184th Street East then serves as a logical traffic generation point for High Occupancy Vehicles, instead of at the bottom of Elhi Hill, at the 166th Avenue East Interchange.

- This Route Development Plan allowed a more detailed evaluation of existing and forecasted traffic volumes. What was determined through the traffic analyses was the fact that this section of SR 410 does experience a worse operating level of service than previously determined in the System Planning process.

- This section of SR 410, known as Elhi Hill will present engineering difficulties. One reason why the current *State Highway System Plan* does not identify HOV lanes for this section of SR 410 is due to the fact that it will be very costly to construct any additional lanes on Elhi Hill. However, the Steering Committee agreed that the need for these lanes will continue to be evident. WSDOT would also need to consider purchasing access rights on the hill (an expensive proposition). The City of Sumner suggests that if travel demand is already high and growing, it may be less expensive to buy access rights sooner rather than later.

- With major developments such as Cascadia planned in this area, the future termination points for the HOV lanes could be extend to Angeline Road or another point east of 184th, depending on future growth.

Recommended Highway Safety Improvements

Information about the WSDOT Highway Safety Program is presented in section 3.1 and in Appendix A. Please refer to this appendix for explanations on the Safety objectives, action strategies, and definitions of Collision Prevention and Collision Reduction categories.

The Safety recommendations in this Route Development Plan provide strategies to Collision Reduction and Collision Prevention target areas identified in the *Highway System Plan*. These recommendations address issues and concerns in the *Highway System Plan* at the time this RDP was developed and may not be representative of strategies in the current or future *Highway System Plan.*

- ***Highway Location: Between SR 167 and Linden Drive***
  MP 8.90 to MP 8.93
  Section Length: 0.03 mile

Deficiency: Identified as a Collision Prevention (run-off-the-road) section.

Recommended Improvement:
The recommended strategy to this section of SR 410 is to provide cross-section and geometric improvements.

The proposed mobility improvements are also recommended as a means to reduce the number and severity of accidents in this section.

- ***Highway Location: 166th Ave E I/C through Elhi Hill Vicinity***

MP 11.00 to MP 13.00
Section Length: 2.00 miles

Deficiency: Identified as a HAC

Recommended Improvement:
The recommended strategy to this section of SR 410 is to provide interchange ramp improvements and access improvements. The proposed mobility improvements are also recommended as a means to reduce the number and severity of accidents in this section.

- ***Highway Location: Vicinity 166th Ave E and Elhi Hill***

MP 11.65 to MP 11.86
Section Length: 0.21 mile

Deficiency: Identified as a Collision Prevention (run-off-the-road) section

Recommended Improvement:
This is contained within the above mentioned HAC section. The recommended strategy to this section of SR 410 is to provide interchange ramp improvements and access improvements as discussed in the preceding section.

The proposed capacity improvements are also recommended as a means to reduce the number and severity of accidents in this section.

Recommended Environmental Retrofit Improvements

This Route Development Plan does not go into detail on improvements in this category. However, the current *WSDOT State Highway System Plan* identifies the following strategy in alignment with the Storm Water Runoff Action Strategy explained in Appendix A:

- ***Project Location: Vicinity between Linden Dr and SR 162***

MP 9.67

Deficiency: Identified as a location to improve Storm Water management.

Recommended Solution:
Construct Bioswale.

• Project Location: Vicinity Elhi Hill

Mile 12 Vicinity

Deficiency: Identified as a location to improve Storm Water management.

Recommended Solution:
This section of SR 410, known as Elhi Hill, needs to be investigated for storm water runoff quantity and quality (per the RDP Steering Committee). Future projects should include this, and the *WSDOT State Highway System Plan* should be updated to reflect this additional location. The Route Development Steering Committee members stated that there is a storm water runoff problem at this location which is not presently identified in the current WSDOT Highway System Plan.

3.3 City of Bonney Lake Vicinity Steering Committee Recommendations

Recommended Highway Mobility Improvements

• Highway Location: 184th St. E. to 214th St. E.

MP 13.6 to MP 15.6
Section Length: 2 miles

Deficiency: Present peak period Level of Service is controlled by traffic signals through the City of Bonney Lake. Presently these intersections operate at a LOS ranging from B to F during the evening peak period. The intersection at 181st Avenue East is presently the only failing intersection. The others appear to function in the LOS B-C range.

Without improvements by year 2016, it is expected that the situation will deteriorate to conditions worse than the desirable LOS D for urban areas at the following intersections: 181st, 184th, and 195th (see Chapter 2.3).

Recent Developments:
SR 410 was multi-laned through the City of Bonney Lake approximately five years ago. However, with recent developments there are now eight traffic signals in approximately two highway miles. In the eastbound direction a third lane has been constructed to serve local right turns near the Lake Tapps Mall and Bonney Lake Village.

Recommended Strategies:
The RDP Steering Committee discussed various strategies to improve the operating conditions along SR 410 in Bonney Lake.

No additional through lanes or traffic signals are proposed in the City of Bonney Lake.

The Highway Median and Access Management:
This section of SR 410 is designated a Class 3 facility in the *WSDOT Access Management Plan* (see Chapter 1.5). As stated in Chapter 1.5, Access Management can provide a benefit to the operational conditions of SR 410. The City of Bonney Lake expressed a desire to have the existing median barrier sections replaced with landscaped raised medians. These sections were evaluated, and from a highway safety perspective, it was determined that these should remain as they are. Horizontal and vertical highway alignment, and the existing median widths in these areas would not provide adequate and safe conditions to construct raised islands.

However, it was determined that in other sections along SR 410 a raised landscaped median would be practical. These sections include the following locations where the existing flush median is delineated using yellow diagonal traffic button stripes:

- Between 195th and South Prairie Road intersections
- Between 192nd Avenue and 195th Avenue intersections
- Between 208th Avenue and 211th Avenue intersections
- Opposite the intersection of 212th Avenue

These sections could be retrofitted with raised islands between channelized intersections. If the City elects to pursue these changes, the RDP Steering Committee recommends that the City adopt the required maintenance of the proposed landscaped medians.

The City of Bonney Lake could possibly fund these Access Management improvements through "enhancement" project grants.

Existing Two-way Left-turn Lane:
WSDOT also discussed with the City of Bonney Lake the possibility of removing the existing TWLTL between the signalized intersections of 181st and 184th. The highway operating conditions would be improved if this TWLTL was replaced with a raised traffic island. The two intersections are only two tenths of a mile apart. Without this improvement, this section of SR 410 will continue to deteriorate to less than desirable operating conditions. Planned developments near these intersections will also impact the future LOS.

Traffic Signals:
This RDP recommends that the existing traffic signal systems within the City of Bonney Lake be ultimately interconnected. Presently they are not one system.

Other Strategies:
An enclosed drainage system along with curbs, gutters, and sidewalks on both sides of the highway within the city limits would resolve the pedestrian access problem with minimal right-of-way requirements. This would also serve to delineate legal highway approaches, thus improving the access management in the corridor.

Recommended Highway Safety Improvements

Information about the WSDOT Highway Safety Program is presented in section 3.1 and in Appendix A. Please refer to this appendix for explanations on the Safety objectives, action strategies, and definitions of Collision Prevention and Collision Reduction categories.

The Safety recommendations in this Route Development Plan provide strategies to Collision Reduction and Collision Prevention target areas identified in the *Highway System Plan*. These recommendations address issues and concerns in the *Highway System Plan* at the time this RDP was developed and may not be representative of strategies in the current or future *Highway System Plan.*

- ***Highway Location: Vicinity Elhi Hill***
  MP 12.56 to MP 12.72
  Section Length: 0.16 mile

Deficiency: Identified as a Collision Prevention (run-off-the-road) section.

Recommended Improvement:
The recommended strategy to this section of SR 410 is to provide interchange ramp improvements and access improvements as discussed in Chapter 5.2.

The proposed mobility improvements are also recommended as a means to reduce the number and severity of accidents in this section.

3.4 Pierce County Steering Committee Recommendations

Recommended Highway Mobility Improvements

The following highway mobility improvements are recommended by the SR 410 RDP Steering Committee. This section of SR 410 between the Cities of Bonney Lake and Buckley is classified as "rural" area.

- ***Highway Location: 214th St E to Mundy-Loss Rd***
  MP 15.61 to MP 19.63
  Section Length: 4.02 miles

Deficiency: Present peak period Level of Service is E . This is below the target LOS C for "rural" areas, indicating an existing deficiency.

Expected Level of Service Results: With the following improvements, SR 410 should operate at LOS B to the planning horizon year 2016.

Recommended Improvement:
The Steering Committee recommends widening this two lane section of SR 410, by providing one additional general purpose lane each direction. This section is presently outside the city limits of Bonney Lake. However the City's urban growth study area extends east to 234th Avenue. It was determined that the median of SR 410 should be restrictive, using Jersey barrier, from 214th St. to Mundy-Loss Rd. This fits the typical characteristics of a *WSDOT Access Management Plan* Class 2 facility (see Chapter 1.5). This strategy will improve the level of service on SR 410 by decreasing travel time and improving safety.

Openings in the restrictive median would occur at 233rd/234th (MP 16.18), 254th (MP 18.10) , 262nd (MP 18.61), and Mundy-Loss Road (MP 19.63). These openings would be channelized for left or U-turns, and signalized as conditions warranted. The above mentioned intersections are included and shown to receive traffic signals in the future, except 234th, which should be realigned west to intersect 233rd. By restricting left turns to the above intersections, it is expected that SR 410 would operate more efficiently.

233rd/234th Intersections
It is known that presently Pierce County is improving 234th near SR 410. However it was determined that due to environmental and safe sight distance issues, 234th should be relocated west to intersect SR 410 at 233rd rather than shift 233rd east to 234th. One environmental concern with moving 233rd east would be the presence of wetlands. Also, if 233rd was shifted east, it would intersect SR 410 too close to the existing Texaco service station, causing sight distance problems.

Design Considerations
When this section of SR 410 enters the Design phase, further analysis of the existing network of roads should be done to check for practical travel patterns. Consideration would need to be given to each left turn intersection for the likelihood of U-turn capability. It is suggested that U-turn locations on the intersecting roads near the highway be constructed to allow large vehicles to turn around. A reference document known as *SR 539, Horton Road to Ten Mile Road, Access Management Project Stage 1*, may be obtained from the WSDOT Northwest Region. This document contains plan sheets that identify proposed U-turn locations along SR 539. From this document it appears that such U-turn yards would require about one acre of property.

Highway Right-of-Way:
This improvement could require additional right-of-way. Table 1.6-1 shows that this section of SR 410 operates within a minimum corridor of 100 feet.

Public Opinion:
Respondents to the Public Opinion Survey (see Appendix B) were asked the likelihood of support for making this section of SR 410 a four lane road with a median barrier. A sizable majority (85%) of the residents and 80% of businesses replied that they would be very likely or somewhat likely to support this proposal.

Public opinion about this was also gathered at the open house held in the City of Bonney Lake on February 8, 1996. Comments received during this public involvement effort were very few. Approximately 15 citizens participated at this open house. Their comments overwhelmingly request that a two-way left-turn lane be constructed from 214th Avenue to 234th Avenue for business access.

Land Use Zoning:
The section between 214th and 234th was rezoned by Pierce County in 1996 to allow commercial development along the roadside adjacent to SR 410.

While this land is still fairly undeveloped, proactive planning and design should occur to prevent further deterioration of the operating level of service of this section of SR 410. As developments occur, consideration should be given to frontage roads and other positive concepts of access management. For example, the distance between SR 410 and 94th Street East (a parallel county road to the north) is less than one quarter mile. Accesses to future developments would best be served by 94th Street East.

The section from 214th to 234th is contained in the City of Bonney Lake urban study area. The Steering Committee concurred that median barrier

should be used from 214th to 233rd/234th. In the future, if Bonney Lake annexes this section, consideration could be given to other forms of median treatment such as raised islands, and, if landscaped an agreement would need to be made with the City that they would maintain the median. This change could result in lower operating speeds, and therefore would likely require a reduction in the current speed limit.

Recommended Highway Safety Improvements

See Section 3.5, City of Buckley vicinity improvements.

Recommended Environmental Retrofit Improvements

This Route Development Plan does not go into detail on improvements in this category. However, the current *WSDOT State Highway System Plan* identifies the following strategy in alignment with the Storm Water Runoff Action Strategy:

- ***Project Location: Vicinity 262nd Ave E***
  MP 18.62

Deficiency: Identified as a location to improve Storm Water management.

Recommended Solution:
Construct Wet Vault.

3.5 City of Buckley Vicinity Steering Committee Recommendations

Presently SR 410 enters the city of Buckley at milepost 19.63, at Mundy-Loss Road. The City's planning area extends west to meet the City of Bonney Lake's urban study area at the vicinity of 234th Street East.

This section of the SR 410 RDP discusses highway improvements recommended for the Buckley vicinity over the next 20 years.

Recommended Highway Mobility Improvements

- ***Highway Location: Mundy Loss Road to King County Line***
  MP 19.63 to MP 21.99
  Section Length: 2.36 miles

Deficiency: Present peak period Level of Service (by highway segment analysis) is LOS D and E. This presents an existing mobility deficiency for

this "rural" designated area. The *WSDOT Highway System Plan* strategies strive to maintain LOS C conditions along rural highways.

Expected Level of Service Results: If the proposed mobility improvements are constructed, the operating condition for this section of highway is expected to be LOS B through the planning horizon year 2016.

Recommended Improvement:
The RDP Steering Committee recommends one additional general purpose lane each direction be constructed along SR 410 through the City of Buckley from Mundy-Loss Road to the Pierce County line. Median treatment could be done using either a TWLTL (if warranted) or a raised traffic island. If the City elects to use raised, landscaped islands, an agreement should be made that identifies the City of Buckley as the agency responsible for the median maintenance. Along with the above proposals, the RDP Steering Committee recommends construction of curb, gutter and sidewalks.

Access Management Plan
SR 410 is presently designated as a Class 2 facility from Mundy-Loss Road to Hinkleman Extension Road. As a result of the City's involvement with this Route Development Plan, the City has requested that this section of SR 410 be designated as a Class 3 facility in the *WSDOT Access Management Plan* (see Appendix E, Agency Correspondence). The RDP Steering Committee concurred with this proposal.

From Hinkleman Extension Road to the Puget Sound Power and Light flume at milepost 21.84, SR 410 is already designated as a Class 3 facility.

From the Puget Sound Power and Light flume to the Pierce County line at milepost 21.99 and beyond, SR 410 is designated as a Class 2 facility. Median barrier should be used in this section of SR 410, when the highway is multi-laned. Consideration should be given to existing intersections for openings in the median to provide left and U-turn opportunities.

Intersections and Traffic Signals
Chapter 1.11 presents a table of current traffic signal locations. In addition to the existing signalized intersections, WSDOT acknowledges the following intersections in the City of Buckley that should ultimately receive signals:

- Mundy-Loss Road (MP 19.63)
- Junction SR 165 (MP 20.68)
- Park Avenue (MP 21.41)

SR 165 Intersection

Additionally, the intersection with SR 165 should be realigned to intersect SR 410 as a single "tee" approach, not a "wye" connection. The existing intersection presents both a safety and mobility concern. Appendix D in this RDP contains correspondence received from local and regional agencies. Presented in Appendix D is a past letter that highlights 3 different options for realigning SR 165 at SR 410.

Bridges
The proposed widening of SR 410 through Buckley and into King County will require that the two structures be widened or replaced. These are the PSPL Co. Canal Bridge and the White River Bridge.

Highway Right-of-Way
The recommended widening through the City of Buckley will present WSDOT and the City with the future challenge of additional right-of-way needs. The section of SR 410 between SR 165 and Park Avenue will require additional space to construct these improvements. A hurdle to overcome will involve obtaining adjacent land with minimal impacts to private and public property. Some known impacts would include the City Park property along the right (east) side, and the local frontage road along the left side of SR 410. This frontage road now serves as access to several homes. It is possible that these homes could be accessed through existing side streets and back alleys.

Recommended Highway Safety Improvements

Information about the WSDOT Highway Safety Program is presented in section 3.1 and in Appendix A. Please refer to this appendix for explanations on the Safety objectives, action strategies, and definitions of Collision Prevention and Collision Reduction categories.

The Safety recommendations in this Route Development Plan provide strategies to Collision Reduction and Collision Prevention target areas identified in the *Highway System Plan*. These recommendations address issues and concerns in the *Highway System Plan* at the time this RDP was developed and may not be representative of strategies in the current or future *Highway System Plan.*

- ***Highway Location: Vicinity 254th Ave E to King County Line***
  MP 18.00 to MP 21.99
  Section Length: 3.99 miles

Deficiency: Identified as a HAC

Recommended Improvement:
This High Accident Corridor actually begins in Pierce County, however it is explained here as one section. The proposed cost-effective solution to reduce accidents in this section is to flatten ditch slopes. Additionally traffic signals should be considered (when warrants are met) at 254th, 262nd, Mundy-Loss Road, Junction with SR 165, and Park Avenue.

The proposed mobility improvements will also go far to reduce severity of collisions.

- ***Highway Location: Vicinity SR 165 Wye Intersection***
  MP 20.66 to MP 20.84
  Section Length: 0.18 mile

Deficiency: Identified as a Collision Prevention (run-off-the-road) section

Recommended Improvement:
Reconstruct this intersection with SR 165, as proposed under 'mobility'. Cross-section and geometric improvements would also occur as a result of the proposed mobility improvements.

3.6 Transportation Demand Management

Transportation demand management (TDM) contains a broad range of strategies intended to reduce and reshape the demand of the transportation system. Such strategies are often relatively low in cost. Their success depends both upon the active cooperation of the private sector, and upon affective decision making by the individuals who use the transportation system. System expansion for single occupancy vehicles is a last resort strategy. TDM measures can include:

- Carpool or vanpool formation assistance
- Encouraging people to walk or ride a bike
- Transit subsidies
- Worker-driver programs for buses and vanpools
- Passenger-only ferry systems
- Designated carpool or vanpool parking
- Parking restrictions - increased parking prices
- Work hour flexibility
- Telecommuting

The Route Development Plan Steering Committee discussed TDM strategies. The proposed park and ride lot in Bonney Lake (see Chapter 3.7) and improvements to transit service, non-motorized travel, and construction of HOV lanes, will help provide infrastructure necessary to make alternate modes of travel more attractive.

There are many possibilities for effective TDM strategies along most state highways, SR 410 included. Many, however, are not controlled by WSDOT, but are in the hands of the local and regional agencies and the private sector. WSDOT encourages these agencies to move forward with plans to implement these strategies.

3.7 Transit Services and Park & Ride Lots

Public Transit

Public transit services can have a positive affect on State Route 410 by reducing the volumes of general purpose vehicles. The city, county, and regional transportation plans were reviewed to acknowledge any strategies for future transit service to SR 410. WSDOT supports efforts to provide increased transit service to SR 410 and is committed to providing safe and efficient access to transit users along the state route.

The *State Highway System Plan* assumes that some form of high capacity transit (such as commuter buses and rails) will be funded and in operation in the Central Puget Sound Region in the next 20 years.

Pierce Transit has been providing transit service since 1980. Route 407 is operating on and around SR 410 between the Puyallup Transit Center and the Cities of Sumner and Bonney Lake. Route 406 operates similarly to Route 407 but extends service to the Cities of Buckley and Enumclaw. On weekends, the route only operates between Puyallup transit center and The Market at Lake Tapps.

The City of Sumner suggested that Pierce Transit may have plans to run express bus service along SR 410, in which case, direct transit access points (i.e. flyer stops) should be examined.

The *Pierce Transit System Plan* identifies the following service improvements:

Regional Express - Pierce Transit will expand peak period services between Bonney Lake to Auburn/Renton by the year 2000. It will also expand peak hour services during midday between Puyallup and Auburn/Kent and between Puyallup and Seattle by the year 2005. By year 2010, it will continue to expand regional express services concentrating on growing regional commute

destinations. New services will likely improve frequencies on existing express routes where overcrowding occurs. By the year 2020, modest bus service improvements will be done, including additional trips to relieve overcrowding. Bus service may be removed where it duplicates rail service.

Commuter Express and Center Connections - Connections will begin serving the key corridors of Bonney Lake/South Hill-Boeing (Fredrickson) and between Bonny Lake-Tacoma CBD by the year 2000 with additional corridors Lakewood to Boeing (Fredrickson) and Puyallup to TCC by the year 2005. By year 2010, midday services and expanded commute hour services will be added on routes that experience significant demand. Modest improvements will take place by year 2020, including additional trips to relieve overloading.

Local Fixed Route - Pierce Transit will provide new services linking Puyallup with Lakewood via S. 72nd St and upgrade services in Puyallup/Sumner, and expand route services in Mid-County areas by the year 2000. It will improve frequencies by the year 2005. Improvements on high demand local routes will be made by establishing new routes in developing neighborhoods surrounding Puyallup and Sumner, and in Mid County areas, especially near Fredrickson and Spanaway by the year 2010. Generally modest service expansion will be provided by year 2020 reflecting the relatively low rate of population growth.

Park and Ride Lots

Park and ride lots are becoming increasingly necessary in Pierce County and the South Puget Sound Region. These facilities promote ride sharing and increased use of public transportation, which in turn reduces the demand for increased automobile capacity. Motorists today and in the future will search for alternate modes of transportation, and if "inviting" these drivers may consider ride sharing, vanpooling and public transit. To be reasonably prepared for this and to plan for future growth, supporting infrastructure such as park and ride lots are vital.

Pierce County and the cities of Sumner , Bonney Lake and Orting are processing applications for large community developments. These major developments, such as Cascadia will add considerable traffic to SR 162 and 410 and the surrounding network of city and county transportation facilities. As these large developments advance, it will become increasingly necessary for the permitting agencies to develop plans to accommodate the substantial increases in traveler populations. Park and ride lots should be located in the future near these large community developments, allowing travelers the opportunity for ride sharing and transit connections.

Table 3.7-1 provides information regarding planned park and ride lots near SR 410.

Table 3.7-1:
Suggested Location
Park and Ride Lot / Transit Center along SR 410

Location & Facility Type	Capacity	Comments
City of Sumner Park & Ride Lot	Data not available at press time.	Would be part of the Sumner Rail Station now that the RTA has passed.
Bonney Lake P & R Lot Vicinity 184th Avenue E	350 stalls plus land for expansion	To be built before year 2000, $4.3 M
Bonney Lake P & R Lot	Add 100 stalls	60 additional stalls by the year 2020, $0.9 M

As growth continues in these areas, the future need for park and ride lots will increase. This RDP will be updated in the future to reflect new strategies outlined in local and regional plans and the *Pierce Transit System Plan.*

3.8 Traffic Signal Recommendations

The Right Reasons for Stopping Traffic
After lesser forms of control have proven ineffective, traffic engineers will review an intersection to determine if a traffic signal is warranted. The Department of Transportation traffic engineers follow specific, uniform guidelines to determine whether a traffic signal is called for. For example, they consider traffic volumes on the intersection approaches, the accident history, the number of other signals in the area and the effect a new signal will have on other streets in the vicinity. These criteria are critical in determining if a signal will have a positive effect on the safety and operational efficiency of an intersection.

Traffic signals impact highway mobility and highway safety and are often suggested as a cure for problems at intersections. They often control the operating level of service of a facility, often in a negative manner particularly if they are too closely spaced. Traffic signals can sometimes create a safer facility by reducing the severity of accidents at intersections. Traffic signals may be the solution to some specific traffic problems, such as stopping the heavy flow of traffic in one direction to permit crossing by minor movements which could not otherwise move safely through an intersection. Traffic signals help traffic move more smoothly and safely only if used in the proper situations.

One should recognize that unwarranted traffic signals can cause traffic to stop where it did not have to before. This can lead to more accidents and cause driver frustration, causing drivers to seek secondary, alternative roads. This can negatively impact the network of roadways, which may not have been developed to carry such travel demand.

State Route 410 Traffic Signal Vision

The purpose of this Section in the SR 410 RDP is to present a long range vision of where traffic signals should or should not be located along SR 410. Table 3.8-1 at the end of this section identifies intersections along SR 410 that *should and should not* be considered for signalization in the future. This traffic signal location "vision" was developed with assistance from the Olympic Region Traffic Engineer and is subject to change.

Where a particular intersection is identified in Table 3.8-1 as a possible location for a traffic signal, it is important to realize that the "candidate" intersection will have to meet warrants, rank high, and prioritize well on a regional list to become eligible for a traffic signal in the future. Generally, intersections of county arterials or major/minor collectors will rank higher on the WSDOT Olympic Region Signal Priority List. Traffic signal needs created by private developments are generally not included in the Signal Priority List, but rather handled as part of the development review process within the Developer Review group.

Traffic signal warrants have not been explored for all intersections along SR 410 as part of this Route Development Plan. However, the Olympic Region Traffic Office Signal Priority List (dated October, 1997 and subject to change) identifies two unsignalized intersections on SR 410 that meet some warrants. These intersections are SR 165 and Park Avenue.

The *WSDOT Access Management Plan* (*AMP*) plays an important role in planning for highway developments. The *AMP* was consulted, as well as the WSDOT Olympic Region Traffic Engineer and the RDP Steering Committee when the SR 410 corridor was evaluated for future traffic signal needs and locations. The public open houses also provided WSDOT with valued input from participating citizens. They mentioned safety concerns at the intersections of 233rd/234th and Mundy-Loss Road.

Table 3.8-1 will serve as a guide to the Olympic Region's Project Development staff when designing projects, and Developer Services team when working with local developers or jurisdictions, by providing them with the vision for SR 410 as it relates to traffic signal locations.

Table 3.8-1: SR 410 Intersection Inventory and Traffic Signal Locations

Intersection Street Name	Left Right Both	State Route Milepost	Existing Signal Yes/No	Possible Future Signal Yes/No
171st Ave. E	R	12.22	no	no
Myers Road East	L	13.11	no	no
Sumner Buckley Hwy 181st Ave. East	B	13.37	yes	
184th Ave. E	B	13.60	yes	
192nd Ave.E	R	14.19	yes	
Lake Tapps Shopping Mall	R	14.29	no	no
198th Ave. E (Lt) / South Prairie Rd. (Rt)	B	14.64	yes	
202nd Ave. E	L	14.88	no	no
208th Ave. E	B	15.17	yes	
Exit to Shopping Center	R	15.27	no	no
Entrance from Shopping Center	R	15.29	no	no
211th Ave. E	R	15.39	yes	
Shopping Center	R	15.47	no	no
214th Ave. E	B	15.60	yes	
229th Ave. E	R	16.56	no	no
233rd Ave. E	L	16.81	no	yes
234th Ave. E	R	16.85	no	yes @ 233rd
254th Ave. E	B	18.10	no	yes
262nd Ave. E	L	18.61	no	yes
Mundy Loss Rd. E	B	19.63	no	yes
Hinkleman Extension Rd	L	20.40	no	no
Shopping Center	L	20.66	no	no
SR 165	R	20.68	no	yes
Jefferson Ave.	L	20.86	no	no
3rd St. (Lt) / Jefferson Ave. (Rt)	B	20.95	no	no
Mason Ave.	L	21.06	no	no
Main St.	B	21.14	yes	
Park Ave.	B	21.41	no	yes
Cemetery Rd.	R	21.55	no	
Cemetery Rd.	R	21.79	no	

3.9 Non-motorized Facilities

The Route Development Steering Committee discussed the needs of non-motorized travelers such as pedestrians and bicyclists. What resulted was a list of recommended improvements to State Route 410 such as paved shoulders and sidewalks.

State Route 410 is not listed as a designated bicycle touring route in the *WSDOT Highway System Plan.*

- ***Location:*** ***Jct. SR 167 T/C to Bonney Lake***

MP 8.84 to MP 12.72

Existing Facilities:
4' to 10' pave shoulder.

Recommended Improvement:
WSDOT supports the cities of Sumner and Puyallup and Pierce County in their plans to provide additional facilities for non-motorized travel. However, Elhi Hill presents many problems due to terrain. With recommended HOV lanes on Elhi Hill, non-motorized travel is difficult to perceive. The steering committee recommended increased transit services as a possible option to carry bikes on Elhi Hill. This does not mean that non-motorized travelers would be restricted from using the shoulder of SR 410 on Elhi Hill, but that transit could be another option. This would require a transit link between a future commuter rail terminal in Sumner to a planned park and ride lot in Bonney Lake.

- ***Location:*** ***Bonney Lake Vic.***

MP 12.72 to 15.60

Existing Facilities:
4' to 8' paved shoulder.

Recommended Improvement:
An enclosed drainage system along with curbs, gutters, sidewalks on both sides of the highway within the city limits would resolve the pedestrian access problem with minimal right-of-way requirements. Addition of 5 foot wide striped bicycle only lanes in the roadway section adjacent to the curb is the preferred accommodation for bicycle travel through the city. The city of Bonney Lake recommends a pedestrian O-xing near 184th. WSDOT could be partners in planning for this improvement.

- ***Location:*** ***214th St E to Mundy Loss Road***

MP 15.60 to 19.62

Existing Facilities:
8' to 10' paved shoulders.

Recommended Improvement:
Use paved shoulders. Citizens expressed the need for a trail along SR 410, however a separate path would be difficult due to limited right-of-way and wetlands in this section. Sumner-Buckley Highway could also be an option.

- ***Location:*** ***Mundy Loss Road vic. to King Co. Line***

MP 19.62 to 21.99

Existing Facilities:
4' to 10' paved shoulders.

Recommended Improvement:
Provide sidewalks and/or other local trails. Continue improvements to the Foothills Trail.

3.11 Environmental Recommendations

An environmental screening analysis has not yet been performed as part of this Route Development Plan. However some environmental concerns were provided by stakeholders and concerned citizens who took an active interest. For example, during several open house opportunities and steering committee meetings, the Department learned from individuals their concerns about highway noise and highway stormwater runoff. This information was then provided to the Olympic Region Environmental and Hydraulic Services Office for their information.

WSDOT will address the environmental aspects of this corridor in the future as necessary during the project development phase of improvements or as future resources allow. At the present time, the section of SR 410 running between 214th Avenue East and Hinkleman Extension Road is anticipated to enter the project design phase. As mentioned above, this will likely include an analysis of environmental issues. This Route Development Plan will then be updated in the future, as resources allow, to include specific details about environmental issues.

Appendix A WSDOT Highway System Plan Programs

A.1 WSDOT Highway Improvements (Program I)

This section of the SR 410 Route Development Plan provides a background on the WSDOT Highway Improvement Program known as Program I. Program I is divided into the four categories of Highway Mobility, Safety, Environmental Retrofit, and Economic Initiatives. To be funded, highway improvement projects in Program I must be contained in the most current *WSDOT State Highway System Plan.*

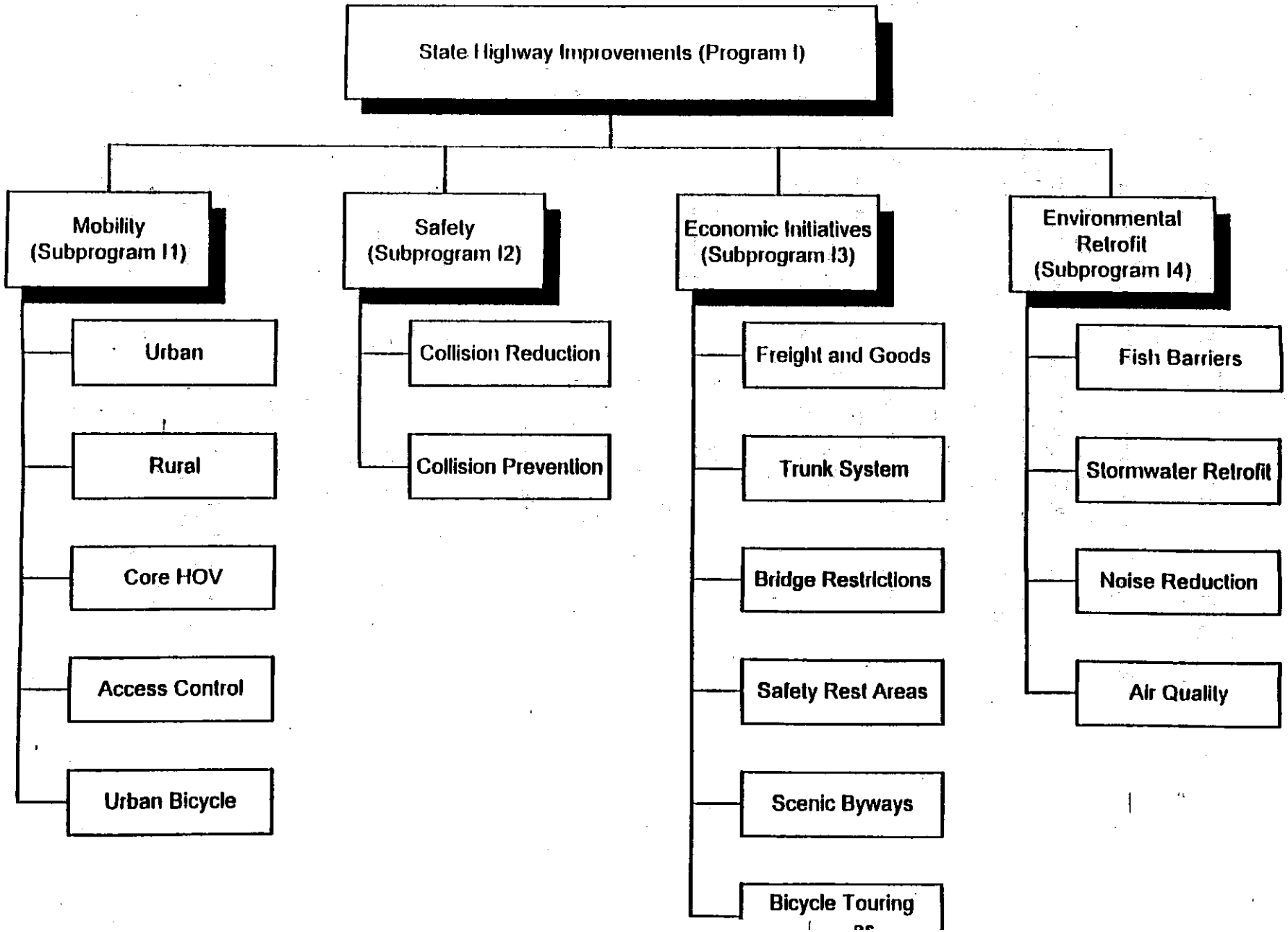
The *Highway System Plan* is one element *of Washington's Transportation Plan.* It is important because it is the basis for the current two-year state transportation budget and the current six-year plan. Specifically, it provides service objectives and strategies for maintaining, operating, preserving, and improving our state highways.

This Route Development Plan for SR 410 helps WSDOT to further the vision and strategies contained in the current *Highway System Plan* by providing a more in-depth analysis of SR 410. This RDP focuses on the Highway Improvement objectives and strategies contained in the *Highway System Plan.* Highway Operations (Program Q) is also discussed in this RDP. The other programs such as Highway Maintenance (Program M) and Highway Preservation (Program P) often do not require public consensus-building. The Highway Maintenance and Preservation programs are not covered in this RDP.

For further information about the WSDOT Highway Improvement Programs, consult the most current *Highway System Plan* or *Washington's Transportation Plan.* For a copy of these documents contact:

Washington State Department of Transportation
PO Box 47370
Olympia, WA 98504-7370
(360) 705-7962

The Highway Improvement Program I structure is illustrated on the following page. This Route Development Plan focuses on the Highway Improvement Program, with subprograms such as Mobility, Safety, Environmental, and Economic. The following program tree highlights the additional subcategories within the four Improvement subprograms.


State Highway Improvements (Program I)
Mobility (Subprogram I1)
Safety (Subprogram I2)
Economic Initiatives (Subprogram I3)
Environmental Retrofit (Subprogram I4)
Urban
Rural
Core HOV
Access Control
Urban Bicycle
Collision Reduction
Collision Prevention
Freight and Goods
Trunk System
Bridge Restrictions
Safety Rest Areas
Scenic Byways
Bicycle Touring
Fish Barriers
Stormwater Retrofit
Noise Reduction
Air Quality

A.2 Mobility Improvement (Subprogram I 1)

Highway System Plan Mobility Service Objective and Action Strategies

The *WSDOT Highway System Plan 1997-2016* Mobility Service Objective and Action Strategies that are applicable to the development of State Route 410 are listed below. For a complete listing of all action strategies consult the current *Highway System Plan.*

Service Objective:
Improve mobility within congested highway corridors.

Action Strategies:
Provide transportation strategies through transportation demand management to reduce the growth rate in vehicle miles traveled.

Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period level of service falls below Level of Service D.

Provide uncongested conditions (Level of Service C) on rural highways.

Whenever cost effective, reduce the number of existing or potential access points by purchasing access rights.

Provide bicycle connections along or across state highways within urban growth areas to complete local bicycle networks.

It is important to note that the present *Highway System Plan* "financially constrained" list of mobility improvements does not include all of the highway mobility improvements recommended in Chapter 3 of this Route Development Plan.

This means that some mobility improvements to SR 410 would possibly not be funded for the next 20 years. This RDP recognizes present highway operating conditions that do not meet current Highway System Plan action strategies, such as maintaining a level of service (LOS) D in Urban areas, or LOS C in Rural sections. Therefore this RDP recommends that SR 410 Highway Improvements be reevaluated in future *Highway System Plan* updates.

The level of highway traffic analysis (including recent traffic counts) that went into this RDP exceeds that which was previously done for the *Highway System Plan.* As a result, this SR 410 Route Development Plan identifies a greater need for capacity improvements than was previously determined.

A.3 Safety Improvement (Subprogram I 2)

Highway System Plan Safety Service Objective and Action Strategies

Highway Safety strategies are included in the financially constrained portion of the *WSDOT Highway System Plan 1997-2016.* Highway Safety Service Objective and Action Strategies that are applicable to the development of SR 410 are listed below. For a complete listing of all action strategies consult the current *Highway System Plan.*

Service Objective:
Provide the safest possible highways within available resources.

Action Strategies:
Improve highway sections that have a high accident history. ***Collision Reduction***

Improve roadways where geometrics, traffic volumes, and speed limits indicate a high accident potential. ***Collision Prevention***

Construct intersection channelization, signals, or both when traffic volume warrants (thresholds) are met. Also ***Collision Prevention***

The recommended Safety Improvement projects presented in Chapter 3 of this RDP, provide strategies to current Collision Reduction and Collision Prevention target areas. Recommended strategies to address HAC's are based on recent accident analyses and previous strategies contained in the current *Highway System Plan.* It was found that some Collision Prevention sections overlap with Collision Reduction sections; and the best improvement strategies are usually common to both.

Collision Reduction

Collision Reduction strategies target highway locations that have a high accident history. Specific elements of the Collision Reduction category that apply to the RDP are identified below.

High Accident Corridors (HACS) - Identify "corridor" type sections of highway (typically greater than 1 mile) that exhibit accident severity and number rates above the statewide average for similar highways. Five years of accident history are used for determining the locations needing improvements.

Collision Prevention

Run-off-the Road Collision Prevention (Risk Reduction)- targets locations that possibly may not have a high accident history but exhibit a strong potential for future run-off-the-road accidents, based on the highway geometry, traffic volumes, and speeds. Listed below are some specific elements of the Collision Prevention category that are applicable to State Route 410.

Risk Reduction - Proactively identifies sections of state highways that have a high probability of vehicles leaving the roadway.

Signals and Channelization Collision Prevention - Identifies high priority intersection improvements such as new traffic signals and added turn lanes.

A.4 Economic Initiatives (Subprogram I 3)

Highway System Plan Economic Initiatives Service Objectives and Action Strategies

The *WSDOT Highway System Plan 1997-2016* Economic Initiatives Service Objectives and Action Strategies are not applicable to the development of State Route 410 and have not been provided in this Route Development Plan. For a complete listing of all service objectives and action strategies for the Economic Initiatives, consult the current *Highway System Plan.*

One purpose of the Economic Initiatives is to provide highway improvements that will increase tourism in Washington State. This program recognizes deficiencies and identifies solutions to such topics as highway seasonal load restrictions, narrow shoulders on designated bicycle touring routes, new safety rest areas, and scenic and recreational highways.

None of the categories under Economic Initiatives apply to State Route 410.

A.5 Environmental Retrofit (Subprogram I 4)

Highway System Plan Environmental Retrofit Service Objective and Action Strategies

Environmental Retrofit targets improvement opportunities to categories such as storm water runoff quality and quantity, fish passage barriers, air quality, noise exposure, and wetlands.

The *WSDOT Highway System Plan 1997-2016* Environmental Retrofit Service Objective and Action Strategy that are applicable to the development of SR 410 are listed below. For a complete listing of all action strategies consult the current *Highway System Plan.*

Service Objective:
Retrofit state highway facilities as appropriate to reduce existing environmental impacts.

Action Strategy:
Reconstruct storm water discharge facilities as opportunities arise.

B.1 Local Agency and Public Input

A steering committee was formed to assist the WSDOT Olympic Region to create this Plan. The steering committee consists of representatives from the Cities of Sumner, Bonney Lake, and Buckley, and Pierce County Public Works and Utilities, Pierce County Planning and Land Services, Pierce Transit, Puget Sound Regional Council, WSDOT Office of Urban Mobility, and the WSDOT Olympic Region Planning Office.

The steering committee meetings, executive interviews, and public open houses took place at various intervals to gain public participation and input. Display materials showing the route vicinity with the initial proposed recommendations were utilized to better present information and ideas. Seven steering committee meetings were held between February 1995 and September 1996. Separate executive interviews were conducted with the City of Sumner, the City of Buckley, Pierce County, and the citizens of the City of Bonney Lake. Two public open houses were held at the Bonney Lake City Hall and the Buckley City Hall on February 8, 1996 and February 15, 1996, respectively, to gain public involvement in the process. Three additional open houses were conducted in September 1996 to present findings and recommendations to the public.

In addition to these public meetings, two meetings were held at WSDOT Olympic Region office in Tumwater to circulate information regarding the progress of the route development plan between the Region Administrator, the Planning Office, Project Development, and the WSDOT Office of Urban Mobility. The table at the end of this Appendix shows the different public meetings held in connection with this route development planning process.

The transportation elements of the comprehensive plans of the Cities of Sumner, Bonney Lake, and Buckley, and Pierce County were reviewed and compared to each other and to the WSDOT System Plan for concurrence. It is noted that the transportation plans and the WSDOT System Plan are aiming towards common goals and objectives. The WSDOT Planning Office had taken into consideration the local and regional transportation plans when projects were proposed to improve the route. Local agencies are encouraged to concur to the WSDOT Route Development Plan.

B.2 Public Opinion Surveys

The WSDOT utilized the services of Pacific Rim Resources to conduct resident and business surveys. The surveys were conducted between May 9 and May 20, 1996, the result summary of which was submitted to WSDOT on June 21, 1996. Telephone surveys were conducted of 300 randomly selected residents in the area from the junction of SR 167 to the Pierce/King County line. A mail survey was sent to businesses along the SR 410 corridor. A total of 64 surveys were completed and returned from businesses. These surveys were conducted to obtain a broad and representative assessment of public preferences for potential improvements on SR 410. Some highlights of this survey are provided below:

More than three-fourths of the residents surveyed along the SR 410 corridor feel that the highway needs improvements. Almost all (96%) of the residents feel the situation will get worse in the next ten years if the roadway remains in its current state. Ninety-four percent of businesses feel the SR 410 traffic situation will get worse in the next ten years if no improvements are made. Sixty-one percent of residents and sixty-three percent of businesses responded that they would be very likely to support a four lane roadway with a center median barrier between 214th Street East and Mundy-Loss Road.

Ninety percent of businesses and eighty-eight percent of residents said that they would support widening SR 410 through the City of Buckley. The widening concept would provide two through lanes in each direction plus a center turning lane or possibly a raised median.

The Executive Summary of the SR 410 Public Opinion Survey is presented here for informational purposes.

SR410 Corridor Plan Survey
EXECUTIVE SUMMARY AND DATA IMPLICATIONS

Introduction

This report summarizes data gathered through surveys conducted on the SR410 corridor between May 9th and May 20th 1996. Telephone surveys were conducted with 300 randomly selected residents in the area defined as running from the junction of SR 167 and SR 410, just east of Sumner, to the King/Pierce County line in Buckley. In addition, a mail survey was sent to businesses along the SR410 corridor. A total of 64 business surveys were completed and returned. At the same time these surveys were conducted for the SR410 corridor, similar survey efforts were underway for the SR161 and SR162 corridors.

These surveys are part of the public involvement program being conducted by the Washington State Department of Transportation Olympic Region to get feedback in a corridor planning effort underway in the SR410 corridor. In addition to these surveys, the Department has been guided by the input of an interjurisdictional steering committee, mailings to community residents, media releases and a series of community open houses to familiarize residents and businesses with the purposes of the Corridor Planning effort.

Organization of this Report

This Executive Summary is structured so that it can serve as a stand alone report and as an introduction to the full report of the surveys on the SR410 Corridor. As such, it includes a summary of data implications, as well as an analysis of how the data from the SR410 survey compare with data from the surveys conducted on SR 161 and SR162. The purpose of this structure is to eliminate the redundancy typically found in survey reports of this type. A more detailed analysis of the survey data is presented in the following sections of this report. Detailed analyses for SR161 and SR162 are presented in separate reports, following the same report structure.

Data Implications

The surveys were conducted to obtain a broad and representative assessment of public preferences for potential improvements on SR410. The questionnaires were structured to respond to the following research questions:

- What problems do residents and businesses perceive on SR410, and what do they feel causes those problems?
- How severe do residents feel the problems are on SR410 and how do they feel the problems will change over time?
- Do residents and businesses see a connection between the problems they perceive and the solutions being proposed. What solutions are preferred in the corridor?

Due to the limited mail surveys returned (64 SR410 surveys), SR410 business responses are not included in the following Executive Summary. They are, however, discussed in the detailed findings.

What problems do residents perceive on SR410, and what do they feel causes those problems?

- More than three-fourths (78%) of the residents surveyed along the SR410 corridor feel that the highway needs improvements.
- Traffic congestion/problems is the one issue nearly two-thirds (63%) of residents feel needs to be addressed in the SR410 corridor.
- When asked specifically about issues, pedestrian and bicyclist safety is the issue most residents (59%) agree is a 'major problem.'

How severe do residents feel the problems are on SR410 and how do they feel the problems will change over time?

- Nearly seven out of ten (69%) feel that the overall traffic situation on and around SR410 has gotten worse in the past five years. Almost all (96%) feel that the traffic situation will get worse in the next ten years if the road remains in its current state.
- The majority (95%) of the residents who think traffic will get worse if nothing is done, attribute the problems to an increase in population in the area.
- Of the residents familiar with the area, almost eight out of ten residents (79%) feel that the traffic situation on section of SR410 from 214th Street to Mundy-Loss Road has gotten worse over the past five years. Almost all (97%) think that the situation on this section will get worse in the next ten years if nothing is done.
- General population increase is mentioned by 93% as a reason for worsening traffic problems on this section of Highway SR410.
- One-quarter (25%) of residents were not familiar with the segment of SR410 between Mundy-Loss Road and Park Avenue in Buckley. Of those familiar with this section, nearly eight out of ten (78%) feel the traffic situation on it has gotten worse in the last five years. More than nine out of ten (95%) think that the traffic situation on this section will get worse in the next ten years if nothing is done.
- Almost all (93%) feel the worsening traffic situation between Mundy-Loss Road and Park Avenue will be due, in part, to population increase in the area.

Do residents see a connection between the problems they perceive and the solutions being proposed. What solutions are preferred in the corridor?

- Widening SR410 to two lanes each way (with a center turning lane and a possibility of a median) between Mundy-Loss Road and Park Avenue is likely to be supported by nearly nine out of ten (88%) of residents familiar with the segment.

How do perceptions of SR410 compare with attitudes of SR161 and SR162?

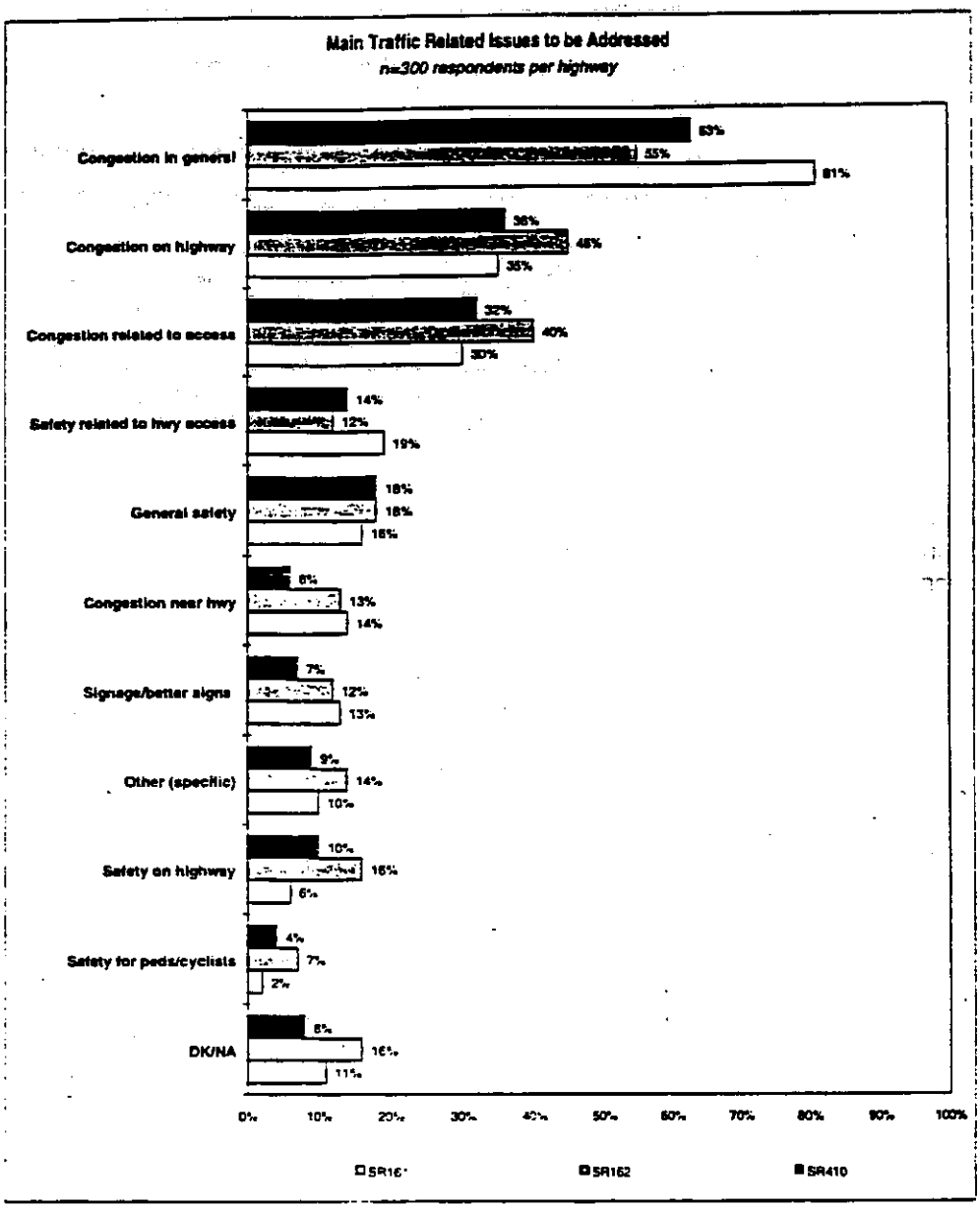
Responses to the three resident questionnaires - SR161, SR162 and SR410 - are very similar. Their concerns show residents identify with similar perceptions and beliefs.

- Consistently, respondents near the various corridors believe the three highways need improvements.

Business respondents are indentified by shading. Please note small sample sizes of SR410 and SR162 businesses.

	Sample size	Not good, needs improving	OK, but could be improved	Fine as is
SR161	300 respondents	55%	32%	11%
SR161	439 respondents	68	24	4
SR162	300 respondents	46	42	12
SR162	28 respondents	64	42	12
SR410	300 respondents	31	48	22
SR410	64 respondents	36	45	13

- As depicted in the following graph, among respondents of the three surveys, congestion on the highways is the biggest concern. Safety issues are mentioned less frequently.



- In all three surveys, support for improvements is shown to be likely; support for turn lanes is more likely than for median barriers.

- Residents who believe highways currently are in bad condition are more likely than other residents to believe the traffic situation will get much worse and more likely to support improvements. On Highway 161, residents who feel the highway definitely needs work are somewhat less likely than others to believe access problems contribute, or will contribute, to the problem.

How do perceptions and attitudes from the business community compare to input from resident surveys?

- Perceptions and attitudes from businesses and local residents along the corridors are generally consistent.
- In general, businesses along SR161 and SR162 tend to view the overall current highway condition to be in somewhat worse condition than do local residents in those areas.
- Businesses are more likely than residents to view highway access as a problem, relating to both congestion and safety issues.
- Business respondents along SR161 and SR162 see the same trend of worsening traffic over the past five years as do residents in those areas. Respondents from SR410 businesses, however, are less likely than local residents to say traffic has gotten worse over the past years.
- There is little to no difference, however, among businesses and residents regarding the future of SR410, SR161 and SR162 - the majority of all respondents feel traffic conditions will get worse with no improvements.
- Business respondents on SR161 and SR162 are more likely than resident respondents to blame a worsened traffic situation on access problems. Respondents with businesses along SR410 are significantly less likely than local residents or businesses along other corridors to view roadway design issues as causing problems.
- On SR410, the likelihood of support for the various improvements are similar between residents and businesses.

DRAFT QUESTIONNAIRE FOR PRETEST
SR 410

SR 410 QUESTIONNAIRE

Hello, may I please speak to one of the heads of household?

SCHEDULE CALLBACK IF NECESSARY
This is a survey about transportation on State Highway Route 410 (READ: "Four ten."). As you may be aware, the Washington State Department of Transportation has been working with a local advisory committee to develop a plan for Highway 410 intended to improve traffic conditions there.

I am _____ with _____, and you are one of 300 persons, selected at random, to participate in this study to help figure out what kinds of solutions make the most sense.

S.1 Before we get started, are you still at [READ ADDRESS FROM SAMPLE LIST]?

1 Yes
2 No - THANK AND TERMINATE

Q1 Would you say you are...(READ)

1 Very familiar,
2 Fairly familiar,
3 Not very familiar, or
4 Not at all familiar with Highway 410? - THANK AND TERMINATE.

Q2 So that we can get a general sense for how the community feels about Highway 410, I'd like to read three statements to you. Thinking about three important issues to those who live along and/or use the highway - traffic congestion, access onto and off of the highway and safety - please choose the one statement you most agree with. (READ THROUGH BEFORE RECORDING RESPONSE. BRIEF PAUSE AFTER READING EACH.)

1 Highway 410 is just fine as is. I do not wish to see any changes made to it.
2 Highway 410 is OK, but I think there are some things that could be done to improve it.
3 The current state of Highway 410 section is not good. I think it definitely needs to have improvements made to it.
4 (DON'T READ) No Choice

Q3 (If '2' or '3' from Q2) What do you think are the main traffic-related issues that should be addressed on and/or around Highway 410? (DON'T READ)

1 Traffic congestion/problems - general (on and around highway)
2 Traffic congestion/problems on the highway itself
3 Traffic congestion/problems related to access onto and off of the highway
4 Traffic congestion/problems near the highway/side streets
5 Safety - general
6 Safety on the highway
7 Safety relating access onto and off of the highway
8 Safety for pedestrians and bicyclists
9 Signage/Need better signs indicating exits/streets, etc.
10 Other (Specify): _____
11 Other (Specify): _____

Now I'm going to read to you several issues relating to the traffic on and around Highway 410. For each of these, please tell me if you think it is a major problem, a moderate problem or not a problem. (READ AND ROTATE)

		Major	Moderate	None	DK
Q4	Traffic congestion on the highway itself	1	2	3	9
Q5	Traffic congestion related to access onto and off of the highway	1	2	3	9
Q6	Traffic congestion near the highway, not on it or related to access onto or off of it (CLARIFY: "That is, general traffic circulation in the vicinity of the highway").	1	2	3	9
Q7	Safety on the highway itself	1	2	3	9
Q8	Safety related to access on and off of the highway	1	2	3	9
Q9	Safety for pedestrians and bicyclists	1	2	3	9
Q10	Directional signage, like exit signs or street signs telling you where you are or how far an exit for a certain street is	1	2	3	9

Q11 Do you feel the overall traffic situation on and around Highway 410 over the past 5 years has...(READ)?

1 Gotten better.
2 Gotten worse, or
3 Remained about the same?

Q12 If Highway 410 remains in its current state, do you feel the overall traffic situation on and around it in the next 10 years will ...(READ)

1 Get much worse,
2 Get somewhat worse.
3 Stay about the same.
4 Get somewhat better, or
5 Get much better?

Q12a (If '1' or '2' in Q12) Why do you say that?

1 General population increase in the area
2 The roadway is too narrow or not designed for volume of traffic
3 Problems with access onto and off of the highway
4 Inadequate roads and signals near the highway
5 Other (Specify): _____
6 Other (Specify): _____

Now we're going to talk about two specific sections of Highway 410.
Highway 410 Section #1: The first section of Highway 410 we'll be talking about runs from 214th street to Mundy-Loss Road.

Q13 Would you say you are...(READ)

1 Very familiar,
2 Fairly familiar,
3 Not very familiar, or
4 Not at all familiar with this section along Highway 410? - SKIP TO HIGHWAY 410 SECTION #2 QUESTIONS.

Q14 Thinking now <u>just about this section of Highway 410,</u> do you feel the overall traffic situation on and around this section over the past 5 years has...(READ)?

1 Gotten better,
2 Gotten worse, or
3 Remained about the same?

Q15 Again thinking just of this section of Highway 410, if it remains in its current state do you feel the overall traffic situation on and around this section in the next 10 years will ...(READ)

1 Get much worse,
2 Get somewhat worse,
3 Stay about the same,
4 Get somewhat better, or
5 Get much better?

Q15a (If '1' or '2' in Q15) Why do you say that?

1 General population increase in the area
2 The roadway is too narrow or not designed for volume of traffic
3 Problems with access onto and off of the highway
4 Inadequate roads and signals near the highway
5 Other (Specify): _____
6 Other (Specify): _____

Now I'm going to read several options being considered for 410.

Q16 A proposed option to attempt to solve some of the concerns about this section of 410, specifically traffic congestion, traffic flow and access onto and off of the highway. The proposed changes are to make this section four lanes, with a median barrier. This would include openings about every half mile at major intersections to turn left or to turn around. How likely would you be to support this proposed option? Would you be...(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

Now we're going to talk about another section of Highway 410.
Highway 410 Section #2: This second section of Highway 410 that we're going to talk about now runs from the Mundy-Loss Road intersection to Park Avenue in Buckley.

Q17 Would you say you are...(READ)

1 Very familiar,
2 Fairly familiar,
3 Not very familiar, or
4 Not at all familiar with this section along Highway 410? - SKIP TO DEMOGRAPHIC SECTION

Q18 Thinking now just about this section of Highway 410, do you feel the overall traffic situation on and around this section over the past 5 years has...(READ)?

1 Gotten better,
2 Gotten worse, or
3 Remained about the same?

Q19 Again thinking just of this section of Highway 410, if it remains in its current state, do you feel the overall traffic situation on and around this section in the next 10 years will ...(READ)

1 Get much worse,
2 Get somewhat worse,
3 Stay about the same,
4 Get somewhat better, or
5 Get much better?

Q19a (If '1' or '2' in Q19) Why do you say that?

1 General population increase in the area
2 The roadway is too narrow or not designed for volume of traffic
3 Problems with access onto and off of the highway
4 Inadequate roads and signals near the highway
5 Other (Specify): _____

Now I'm going to read several options being considered for 410.

Q20 As with the other section of 410 we talked about, a proposed option to attempt to solve some of the concerns about traffic congestion and safety on this part of 410 is to add lanes. One way to do this widening would be to provide two lanes each way with a center turning lane, with the possibility of landscaped median island in some areas. How likely would you be to support this proposed option? Would you be...(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

Q21 Another proposed change, this one to address pedestrian safety concerns, is to add sidewalks and local trails on and around this section of 410. How likely would you be to support this proposed option? Would you be...(READ)

1 Very likely,
2 Somewhat likely,
3 Somewhat unlikely, or
4 Very unlikely?

DEMOGRAPHICS

Now we have just a few demographic questions for statistical categorization purposes only. All of your responses will remain confidential.

Q22 In an average week, how often do you use Highway 410 on any or all parts of it between Buckley and Bonney Lake? (Round trip daily commute, or any other type of round trip = two trips)

_____ # of trip per week

Q23 How long have you lived in your current residence?

1 Less than 2 years
2 2-5 years
3 6-10 years
4 11 to 15 years
5 Over 15 years

Q24 How many persons live in your household at the current time?

_____ # of persons in household

Q25 Do you own or rent your home?

1 Own
2 Rent

BY OBSERVATION: 1 MALE 2 FEMALE

Washington State Department of Transportation

410

Business Survey

The Washington State Department of Transportation has been working to assess what sort of improvements make the most sense for Highway 410. You are one of several hundred businesses along 410 we are contacting for feedback about potential improvements. Please take a few minutes to fill out this questionnaire, and return by mail (postage paid) within 7 days. Thank you!

Q1 – In order to get a general sense for how the community feels about Highway 410, please choose the one statement you most agree with, thinking about traffic congestion, access onto and off of the highway and safety. (Please check one only)

- ☐ Highway 410 is just fine as is. I do not wish to see any changes made to it - *Please skip now to Q3*
- ☒ Highway 410 is OK, but I think there are some things that could be done to improve it.
- ☐ The current state of Highway 410 is not good. I think it definitely needs to have improvements made to it.
- ☐ No Opinion - Please skip now to Q3

Q2 – What do you think are the main traffic-related issues that should be addressed on and/or around Highway 410?
(Please check as many as are applicable)

- ☐ General traffic congestion/problems on and around highway
- ☐ Traffic congestion/problems *on the highway itself*
- ☐ Traffic congestion/problems *related to access onto and off of the highway*
- ☐ Traffic congestion/problems *near the highway/side streets*
- ☐ Safety - general
- ☐ Safety *on the highway*
- ☐ Safety *related to access onto and off of the highway*
- ☐ Safety for *pedestrians and bicyclists*
- ☐ Signage/Need better signs indicating exits/streets, etc.
- ☐ Other - Please specify.

_____

For each of the following highway issues, please indicate if you think it is a major problem, a moderate problem or not a problem on 410.

Q3 – Traffic congestion on the highway itself

- ☐ Major problem
- ☐ Moderate problem
- ☒ Not a problem
- ☐ Don't know

Q4 – Traffic congestion related to access onto and off of the highway

- ☐ Major problem
- ☒ Moderate problem
- ☐ Not a problem
- ☐ Don't know

Q5 – Traffic congestion near the highway, not on it or related to access onto or off of it. (General traffic circulation in the vicinity of the highway)

- ☐ Major problem
- ☒ Moderate problem
- ☐ Not a problem
- ☐ Don't know

Q6 – Safety on the highway itself

- ☐ Major problem
- ☐ Moderate problem
- ☐ Not a problem
- ☐ Don't know

Q7 – Safety related to access onto and off of the highway

- ☐ Major problem
- ☐ Moderate problem
- ☐ Not a problem
- ☐ Don't know

Q8 – Safety for pedestrians and bicyclists

- ☐ Major problem
- ☒ Moderate problem
- ☐ Not a problem
- ☐ Don't know

Q9 – Directional signage, like exit signs or street signs telling you where you are or how far an exit for a certain street is

- ☐ Major problem
- ☒ Moderate problem
- ☐ Not a problem
- ☐ Don't know

Q10 – Do you feel the overall traffic situation on and around Highway 410 over the past 5 years has...

- ☐ Gotten better,
- ☒ Gotten worse, or
- ☐ Remained about the same?

Q11 – If Highway 410 remains in its current state, do you feel the overall traffic situation on and around it in the next 10 years will ...

- ☒ Get much worse,
- ☐ Get somewhat worse,
- ☐ Stay about the same, - *Skip now to Q12*
- ☐ Get somewhat better, or - *Skip now to Q12*
- ☐ Get much better? - *Skip now to Q12*

Q11a – Why do you say that?

- ☒ General population increase in the area
- ☐ The roadway is too narrow/not designed for volume of traffic
- ☐ Problems with access onto and off of the highway
- ☐ Inadequate roads and signals near the highway
- ☐ Other - Please specify.

_____

Questions 12 through 14 refer to a specific section of Highway 410 that runs from 214th Street to Mundy-Loss Road.

Q12 – Thinking now just about this section of Highway 410, do you feel the overall traffic situation on and around this section over the past 5 years has..

- ☐ Gotten better,
- ☐ Gotten worse, or
- ☐ Remained about the same?

Q13 – Again thinking just of this section of Highway 410, if it remains in its current state, do you feel the overall traffic situation on and around this section in the next 10 years will ...

- ☐ Get much worse,
- ☐ Get somewhat worse,
- ☐ Stay about the same, - *Skip now to Q14*
- ☐ Get somewhat better, or - *Skip now to Q14*
- ☐ Get much better? - *Skip now to Q14*

Q13a – Why do you say that?

- ☐ General population increase in the area
- ☐ The roadway is too narrow/not designed for volume of traffic
- ☐ Problems with access onto and off of the highway
- ☐ Inadequate roads and signals near the highway
- ☐ Other - Please specify

_____

Q14 – A proposed option to attempt to solve some of the concerns about this section of 410, specifically traffic congestion, traffic flow and access onto and off of the highway, is to make this section four lanes with a median barrier. This would include openings about every half mile at major intersections to turn left or to turn around. How likely would you be to support this proposed option? Would you be...

- ☒ Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely or
- ☐ Very unlikely to support this option?

Please continue on back

Questions 15 through 18 refer to a second section of Highway 410, which runs from the Mundy-Loss Road intersection to Park Avenue in Buckley

Q15 – Thinking now just about this section of Highway 410, do you feel the overall traffic situation on and around this section over the past 5 years has...

- ☐ Gotten better,
- ☐ Gotten worse, or
- [X] Remained about the same?

Q16 – Again thinking just of this section of Highway 410, if it remains in its current state, do you feel the overall traffic situation on and around this section in the next 10 years will ...

- [X] Get much worse,
- ☐ Get somewhat worse,
- ☐ Stay about the same, - *Skip now to Q17*
- ☐ Get somewhat better, or - *Skip now to Q17*
- ☐ Get much better? - *Skip now to Q17*

Q16a – Why do you say that?

- [X] General population increase in the area
- ☐ The roadway is too narrow/not designed for volume of traffic
- ☐ Problems with access onto and off of the highway
- ☐ Inadequate roads and signals near the highway
- ☐ Other - Please specify: ____________

Following are two options being considered for this section of 410. Please indicate how likely you would be to support each one.

Q17 – A proposed option to attempt to solve some of the concerns about traffic congestion and safety on this part of 410 is to add lanes. One way to do this widening would be to provide two lanes each way with a center turning lane, with the possibility of landscaped median island in some areas. How likely would you be to support this proposed option? Would you be...

- [X] Very likely,
- ☐ Somewhat likely,
- ☐ Somewhat unlikely, or
- ☐ Very unlikely to support this option?

Q18 – Another proposed change, this one to address pedestrian safety concerns, is to add sidewalks and local trails on and around this section of 410. How likely would you be to support this proposed option? Would you be...

- ☐ Very likely,
- ☐ Somewhat likely,
- [X] Somewhat unlikely, or
- ☐ Very unlikely to support this option?

The following questions are for statistical purposes only. All of your responses will remain confidential.

Q19 – In an average week, how often do you use Highway 410 (on any or all parts of it) between Buckley and Bonney Lake? (Round trip daily commute, or any other type of round trip = two trips)

__5__ # of trips per week

Q20 – How many employees does your business have?

__13__ # of employees

Q21 – How long has your business been at its current site?

- ☐ Less than 2 years
- [X] 2-5 years
- ☐ 6-10 years
- ☐ 11 to 15 years
- ☐ Over 15 years

Q22 – What type of business is this?

- ☐ Manufacturing
- [X] Business services
- ☐ Personal services
- ☐ Retail
- ☐ Wholesaler/Distributor
- ☐ Other - Please specify: ____________

Q23 – What is the address of this business?

15713 E MAIN ST
Street Address

____
Suite Number

SUMNER WA 9839C
City/Zip Code

Please fold the survey and tape the seal so that the Business Reply Mail panel is showing and mail it within seven days.

Thanks for your help with our research. Your opinions are greatly appreciated!

WHY ISN'T SOMETHING BEING DONE ABOUT THE EYESORE + ENCROACHMENT BY BOWEN AUTO YARD ONTO HWY 410?

Refold so business reply address shows and tape closed

410 Washington State Department of Transportation Business Survey

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO 155 OLYMPIA WA

POSTAGE WILL BE PAID BY ADDRESSEE

PACIFIC RIM RESOURCES
600 UNIVERSITY ST STE 2010
SEATTLE WA 98101-9956

B.3 Public and Agency Meetings

The following table presents a history of public and agency meetings that were held to help the SR 410 RDP Steering Committee reach consensus on issues contained in this Route Development Plan.

Table B.3-1:
SR 410 Route Development Plan Meetings Summary

MEETING	DATE	LOCATION	ATTENDEES
Initial Steering Committee Meeting Multi-Route: SR's 161, 162, 410	02/01/95	Pierce County Annex Conference Room C Tacoma, WA	Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Puget Sound Regional Council WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
2nd Steering Committee Meeting Multi-Route: SR's 161, 162, 410	03/01/95	Pierce County Annex Conference Room C Tacoma, WA	City of Bonney Lake City of Buckley City of Orting City of Puyallup City of Sumner Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Puget Sound Regional Council Town of South Prairie WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Tumwater Project Office
3rd Steering Committee Meeting Last Multi-Route meeting: SR's 161, 162, 410	04/12/95	Pierce County Annex Conference Room C Tacoma, WA	City of Bonney Lake City of Orting City of Sumner Foothills Rails to Trails Coalition Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. Pierce Transit Puget Sound Regional Council WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview City of Buckley	07/06/95	City Hall, Buckley, WA	City of Buckley WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview City of Sumner	07/07/95	City Hall, Sumner, WA	City of Sumner WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview City of Bonney Lake	07/25/95	City Hall Council Chambers, Bonney Lake, WA	City of Bonney Lake Gray and Osborne, Inc. WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview Pierce County	08/10/95	Pierce County Annex Building Tacoma, WA	Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. WSDOT Office of Urban Mobility WSDOT Olympic Region Planning

Table B.3-1 (cont.):
SR 410 Route Development Plan Meetings Summary

MEETING	DATE	LOCATION	ATTENDEES
Executive Interview WSDOT Olympic Region Program Development	09/18/95	WSDOT Olympic Region HQ Tumwater, WA	WSDOT Olympic Region Program Development WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Executive Interview WSDOT Office of Urban Mobility	09/25/95	WSDOT Office of Urban Mobility Seattle, WA	WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Information Sharing	10/23/95	WSDOT Olympic Region HQ Tumwater, WA	WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
4th Steering Committee Meeting	11/09/95	City Hall, Sumner, WA	City of Buckley City of Bonney Lake City of Sumner Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
Information Sharing WSDOT Olympic Region	01/16/96	WSDOT Olympic Region HQ Tumwater, WA	Regional Administrator, WSDOT Olympic Region WSDOT Office of Urban Mobility WSDOT Olympic Region Planning
Presentation to Buckley City Council	01/23/96	City Hall Council Chambers Buckley, WA	Buckley City Council Public City of Buckley WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
Presentation to Bonney Lake City Council	01/30/96	City Hall Council Chambers Bonney Lake, WA	Bonney Lake City Council Public City of Bonney Lake WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
Open House	02/08/96	City Hall Council Chambers Bonney Lake, WA	Public City of Bonney Lake WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
Open House	02/15/96	City Hall Council Chambers Buckley, WA	Public City of Buckley WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
Information Sharing WSDOT Olympic Region	03/05/96	WSDOT Project Office Midland, WA	WSDOT Olympic Region Planning WSDOT Midland Project Office

Table B.3-1 (cont.):
SR 410 Route Development Plan Meetings Summary

MEETING	DATE	LOCATION	ATTENDEES
5th Steering Committee Meeting *Solutions Matrix Discussion to explore options*	03/05/96	City Hall Council Chambers Bonney Lake, WA	City of Buckley City of Bonney Lake City of Sumner Pierce Transit Pierce Co. Public Works & Utilities WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
6th Steering Committee Meeting ***Consensus reached on majority of issues***	03/28/96	City Hall Council Chambers Bonney Lake, WA	City of Buckley City of Bonney Lake City of Sumner WSDOT Office of Urban Mobility WSDOT Olympic Region Planning WSDOT Midland Project Office
Meeting - Cascadia Employment-Based Community	06/23/96	WSDOT Olympic Region HQ Tumwater, WA	TDA Inc. (Cascadia Rep.) WSDOT Olympic Region Planning WSDOT Transportation Data Office
Meeting - Cascadia Employment-Based Community	07/15/96	Pierce County Annex Building Tacoma, WA	TDA Inc. (Cascadia Rep. Kato & Warren (Cascadia Rep.) Pierce Co. Public Works & Utilities Pierce Co. Planning and Land Svcs. City of Orting City of Buckley WSDOT Olympic Region Traffic WSDOT Olympic Region Planning
Meeting - Cascadia Employment-Based Community	08/07/96	Pierce County Annex Building Tacoma, WA	TDA Inc. (Cascadia Rep.) Pierce Co. Planning and Land Svcs. WSDOT Olympic Region Traffic WSDOT Olympic Region Planning
7th Steering Committee Meeting	09/18/96	City Hall Council Chambers Bonney Lake, WA	City of Sumner City of Bonney Lake City of Buckley WSDOT Olympic Region Planning
Open House	09/19/96	City Hall Council Chambers Bonney Lake, WA	Public City of Bonney Lake WSDOT Olympic Region Planning
Open House & Presentation to Buckley City Council	09/24/96	City Hall Buckley, WA	Public City of Buckley WSDOT Olympic Region Planning
Open House	09/26/96	City Hall Council Chambers Sumner, WA	Public City of Sumner WSDOT Olympic Region Planning
RDP Presentation	11/26/96	Antones Restaturant	Sumner Rotary Club

In addition to their involvement in creating the route planning of SR 410, the Steering Committee members were sent copies of the Draft SR 410 Route Development Plan in September, 1996. In doing so WSDOT requested that the steering members review and provide written comments reflecting their agency's concurrence of the Draft plan.

The following agencies were provided with a Draft Route Development Plan for their review:

Puget Sound Regional Council
Pierce County
Pierce Transit
City of Sumner
City of Bukley
City of Bonney Lake

As of December 31, 1996, the following agencies had provided written comments addressed to WSDOT regarding the Draft SR 410 Route Development Plan:

Puget Sound Regional Council
City of Sumner
City of Bukley
City of Bonney Lake

The following letters highlight support and concerns by the above mentioned participating agencies to issues addressed in the SR 410 Route Development Plan. While many letters may have been received by a single agency, the following are those that identify project preferences.

Washington State Department of Transportation
Sid Morrison
Secretary of Transportation

Olympic Region Headquarters
5720 Capitol Boulevard Tumwater
P O Box 47440
Olympia, WA 98504-7440

(360) 357-2600
Fax (360) 357-2601

December 12, 1996

Mr. Les MacDonald, P. E.
Public Works Director
City of Sumner
1104 Maple Street
Sumner, WA 98390

Dear Mr. MacDonald:

I am responding to your letter of November 18, 1996, regarding the State Route (SR) 410 draft Route Development Plan (RDP). Let me begin by assuring you that a copy of your letter will be included in the final documentation. We will also address your comments within the RDP, per the following discussion of each:

Page 1-6 Section 1.5

This is a good comment, that we have not provided detail on the background and reasoning behind the Service Objective and Action Strategy. However, we took this direction to avoid duplicating the WSDOT Highway System Plan. Therefore, we will make no changes to the RDP on this comment, but would like to refer you back to page 1-1 where we have indicated the address for obtaining the System Plan.

Page 3-10 Table 3.5-1

We will provide an explanation of the various classification systems (e.g., access, roadside, functional) in Chapter 2 to help clarify this issue. The reference on Page 3-10 is currently correct, but should be evaluated for change. The impact would be minimal in terms of roadside conditions. However, we will follow-up with our Olympia Service Center to develop consistency across the classifications on this section of SR 410. Also, we have included for your information the latest printing of the *WSDOT Roadside Classification Plan*, so you can see what the five roadside classifications are for Washington State highways.

Page 4-5 Table 4.3-2

As you are aware, we recently completed capacity improvements on the segment of SR 410, and have no other improvement plans at this time, unless another funding source (local or private) came forward to make improvements. To address the LOS F

condition, the RDP recommends interconnection of all signals thru the Bonney Lake area, and HOV treatments to the proposed park-and-ride lot.

Page 5-18 Table 5.8-1

We will include this discussion in the *Park and Ride Lots* section of the RDP.

Section 6

We appreciate your request to review this section, and regret that it was not available for review. We have delayed final printing for several months now in order to incorporate comments from each jurisdiction, and plan to prepare the final document without distribution section 6 for further review. However, we will state in the beginning of this section that we did not distribute it for comments before final printing, but will also clearly state that this fact would not preclude the local jurisdictions from further discussion, refinement, and decision-making of these issues.

General

We concur with this comment, and will incorporate the discussion into Chapter 6. These issues will also be covered in detail during design stages of work on SR 410.

Comments from Department of Community Development

We will emphasize the City of Sumner's specifically stated support for HOV to HOV and direct transit access, particularly for incorporation into future planning, environmental, and design work on SR 410. We will also incorporate the City's discussion on the purchase of access rights on Elhi Hill. However, let me note that getting approval from the revenue sources to purchase access rights is difficult, unless it is tied to a project that will also be funded for completion.

We concur that there is only minimal information regarding bicycles and pedestrians. However, we in the Olympic Region Planning Office have dedicated staff to work further on these issues with the City of Sumner. Please contact Mr. T. J. Nedrow at (360) 357-2728 if you would like to work on further coordination.

It would be difficult for the Department to implement direct transit treatments without association to the completion of HOV lanes.

We will conclude the process for the time being on SR 410 as we complete and distribute the final draft, including revisions as noted above, within the next few weeks. Please be assured that as those jurisdictions along SR 410 update their land use and transportation models and plans, and as other changes occur along the route, we will make updates to the RDP accordingly as our budget and time allow.

Thank you for being involved in the RDP process, and for supplying comments that will improve the draft RDP. We encourage your continued communication with the Planning Office on RDP issues and other planning issues as they arise. If you have further questions or comments, please contact Chris Schroedel at (360) 357-2763.

Sincerely,

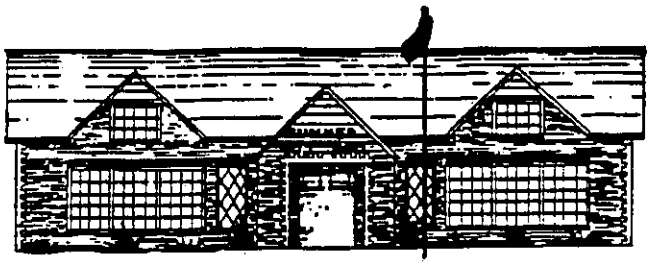
Gary Farnsworth
Assistant Transportation Planning Manager

GCF:cs

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850



MEMORANDUM

TO: Chris Schroedel, WSDOT Planning Engineer

FROM: Les MacDonald, P.E., Public Works Director

RE: SR 410 Route Development Plan
Review Comments

DATE: November 18, 1996

Upon review of the draft RDP I have the following comments and observations. Please let me know if you have any questions.

Page 1-6 Section 1.5
Need to expand the Action Strategy to provide more specific direction on why facilities need to be reconstructed. This will help define which ones need to be done.

Page 3-10 Table 3.5-1
Section through Sumner classified as Rural. Is this correct? What would impact be if this was changed to semi urban or urban? Page 4-2 Section 4.3 refers to this section as urban as do other sections throughout the RDP.

Page 4-5 Table 4.3-2
Are there any proposals for improvements to intersection at MP 13.37 currently operating at LOS F?

Page 5-18 Table 5.8-1
A Park and Ride lot is to be available as part of Sumner Rail Station now that the RTA has passed.

Section 6
Would like to review the draft of this section before the final RDP is printed. This could have important impacts on Sumner's issues with drainage and water quality.

General
Need to address drainage, water quality and landscaping issues along entire route

C:\CORRESPONDANCE\SR410 RDP MEMO.DOC

Selected comments from City of Sumner Department of Community Development review

The City of Sumner should push hard for an HOV to HOV direct connection (SR167 to SR410). Planning efforts should be undertaken now to ensure that there is adequate ROW space to accommodate this construction without impacting any public recreation areas (i.e., to avoid creating a DOT Section 4(f) impact).

Pierce Transit may have plans to run express bus service along SR410, in which case, direct transit access points (i.e., flyer stops) should be examined through out the planning process.

The cost of purchasing access rights of Elhi Hill may be an expensive proposition today, but if travel demand along this segment of SR410 is already high and growing, it may be a less expensive proposition to buy access rights sooner than later . Any alternatives?

Pedestrian and Bicycle safety and facilities are not well addressed in this report.

With regard to the Bonney Lake Park and Ride facility at SR410 and 184th, if HOV lanes cannot be constructed in this segment of the project, then wouldn't a transit direct connection to SR410 be included for discussion under mobility improvements and TSM measures? How feasible would such an improvement be to implement?

C:\CORRESPONDANCE\SR410 RDP MEMO.DOC

BONNEY Lake

City Hall

October 31, 1996

Chris Schroedel, P.E.
WSDOT
Olympic Planning Office
P.O. Box 47440
Olympia, WA 98504-7440

RE: SR-410 Route Development Plan Review

Dear Mr. Schroedel:

I have reviewed the SR-410 RDP and have compiled a brief list of comments for your consideration. These comments attempt to incorporate concerns of the City's Planning Department as well.

Section 2.1

The present east city limit of Bonney Lake is the west side of 214th Avenue East in this area (MP 15.60). This description will affect both the paragraph on Bonney Lake and the following pertaining to rural Pierce County. It could be noted that the future Bonney Lake urban growth area will extend to the vicinity of 234th Avenue East.

Section 5.3

The Highway Median and Access Management:
I do not agree with the statement pertaining to the replacement of existing median sections with landscaped raised medians as it is written in this paragraph. The existing Jersey barriers are very safe indeed, providing what is essentially a concrete wall between opposing traffic streams. However, installation of raised landscaped medians, which are not as high but much wider giving greater separation, are quite safe as well. From a highway safety perspective, I do not see a significant difference between the two in a reduced speed zone such as we are discussing.

Existing Two-way Left-turn Lane:
The elimination of this TWLTL would most likely help future traffic flows along SR-410 in this area. The timing of this item is very critical to what is essentially Bonney Lake's only concentrated "downtown" area. The interior road system in this part of town as presently constructed cannot support the removal of the TWLTL. Elimination of the TWLTL will leave some existing businesses isolated, requiring patrons to drive through a labyrinth of back alleys and parking lots to reach their destination. The elimination of the

P.O. Box 7380 • 19306 Bonney Lake Blvd.
Bonney Lake, WA 98390-8850
(206) 862-8602 • FAX (206) 862-8538

existing TWLTL could only take place after a modification of the existing adjacent interior system on private properties.

Section 5.4

Recommended Improvement:
As mentioned in this section, the stretch of SR-410 from 214th Ave. E. to the vicinity of 234th Ave. E. is expected to eventually become part of the City of Bonney Lake. Widening of this area from two lanes to four will greatly improve the LOS in this area. Our concern with the plans as written pertain to the installation of the Jersey barrier. The City would like to keep consistent with the median discussions in Section 5.3 and install raised landscaped medians out to 234th Ave. E. adding to the identity of the east city limits. It is also expected that this area will continue to develop commercially. The installation of Jersey barriers with no openings until 234th Ave. E. will be too restrictive. Installation of a raised median barrier in this area will afford the City the flexibility needed to effectively develop this area and limit the impacts to through traffic flow on SR-410.

The City of Bonney Lake greatly appreciates the opportunity to comment on the WSDOT's Route Development Plan for SR-410. We ask that you give our comments your full consideration and include them in the RDP. If you would like to discuss any of these issues further, either myself or Ed Davis (Planning Director) can be reached at (206) 862-8602.

Sincerely,

Greg Westrand, P.E.
City Engineer

Puget Sound Regional Council
PSRC

RECEIVED
OCT 28 1996
OLYMPIC REGION

October 25, 1996

Gary Farnsworth
Assistant Transportation Planning Manager
Washington State Department of Transportation
Olympic Region Headquarters
5720 Capitol Blvd., Tumwater
P.O. Box 47440
Olympia, WA 98504-7440

Dear Mr. Farnsworth:

Thank you for your transmittal of the Draft Route Development Plans for SR 161, SR 162 and SR 410. In general, we are pleased with the documents' attention to issues such as access management and the need to look at multimodal improvements to address capacity requirements along portions of these routes. We would also offer the following specific comments:

- Within Section 5 of each document (Proposed Route Improvements), additional detail should be given to the benefit of **restricting access** to the state highway, as well as how/where those improvements might be accomplished. Benefits could be improved level of service, decreased travel time, etc. Also, describing additional lanes as additional *general purpose* lanes would help distinguish these improvements from HOV.

- The Executive Summary of each document should describe the State's ability to fund the improvements outlined in the RDP. Nearly all of the mobility improvements listed for these routes would require additional revenue authority, such as an increased gas tax. Although this is briefly referred to in Section 8, its importance warrants a discussion at the beginning of the document.

We would like to also acknowledge the extensive efforts you have made over the last year and a half to involve the public as well as the affected communities in the corridors. Those efforts should create a solid foundation of support by all parties for the recommendations contained in the route development plans.

Sincerely,

Anthony W. Lickteig
Associate Planner

cc: Peter Beaulieu, Principal Planner
Don Pethick, Principal Planner
c:\transysrdppierc.o96 awl

City of Sumner

1104 Maple Street
Sumner, Washington 98390

(206) 863-8300
Fax (206) 863-2850

RECEIVED
OCT 17 1996
OLYMPIC REGION

October 5, 1996

Mr. Chris Schroedel, P.E.
Design Studies Engineer
Washington Department of Transportation
PO Box 47440
Olympia, Washington 98504-7440

Re: State Route 410 Route Development Plan

Dear Mr. Schroedel:

Thank you for the opportunity to comment on the Department of Transportation's Plans for State Route 410. Since this highway was built in the 1970's, Sumner has been significantly impacted by the effects of construction and the continued increases in traffic. For this reason, Sumner staff have been actively participating in the Route planning. It is with the understanding of this participation that I will limit my comments to the impacts to Salmon Creek. The technical issues and those related to other impacts and design will be addressed by the City staff.

Just before SR 410 goes up onto Ehli Hill on the way to Bonney Lake, it crosses over Salmon Creek. This tributary to the White River is classified as a Type III stream because of its ability to sustain fisheries. The stream has been heavily impacted by urbanization of the surrounding land, changes to drainage patterns, absence of regular maintenance, and degradation from SR 410 runoff. In addition to the impaired fisheries resource, the stream is far short of its recreation, open space, and wildlife habitat potential because of these impacts.

Over the past 5 years, many groups from the City, County, federal agencies to businesses, property owners, and citizens have teamed up to work for the stream's future. Culvert removal, tree planting, channel clearing, public education, and water quality monitoring are all improvements these groups are making. Realizing that SR 410 plays a critical part in the stream's future, I ask that whatever changes are made to the freeway, that they be sensitive to remedying the prior impacts and preventing them in the future.

We would like to work with the Department of Transportation on continued water quality monitoring, stream improvements, retention systems, and runoff water quality improvements. Only with these efforts can we ensure that the inevitable expansion of the freeway system will not further impact the stream and can significantly mitigate past problems.

I thank you for your consideration of these concerns and for working closely with the City on this project.

Sincerely,

Robert A. Moltke
Mayor

cc: Les MacDonald, Public Works Director

BUCKLEY
BELOW THE SNOW
1890
ABOVE THE FOG

Planning & Community Develop

Mayor John

October 3, 1996

Gary Farnsworth
Assistant Transportation Planning Manager
WSDOT
Olympic Region
5720 Capitol Boulevard
P.O. Box 47440
Olympia, WA 98504

Re: SR-410 Draft Route Development Plan

Dear Mr. Farnsworth

I would like to respond to your letter dated September 17 requesting comments on the Draft SR-410 Route Development Plan document. The document has been reviewed, particularly Section 5.5 (pages 5-12 through 5-14). The information that is presented reflects the discussion and data gathered during the steering committee process. The City agrees with the following recommendations contained in the document:

- installation of curb, gutter and sidewalks along SR-410 through Buckley
- redesignation of the segment between Mundy-Loss Road and Hinkleman Extension Road to a Class 3 facility
- signalization of the Mundy-Loss Road, Junction SR-165, and Park Avenue intersections
- realignment of the SR-165 intersection

We acknowledge that further work will be necessary to determine right-of-way needs, particularly between SR-165 and Park Avenue. The Department is encouraged to consider public comments regarding median treatment on the highway within the City of Buckley.

811 Main Street. • P.O. Box D • Buckley, WA 98321 Phone: (360) 829-1921 Fax: (360) 829-9363 TDD/Voice: 1-800-833-6384

The recent Open House presentation in Buckley was appreciated. We would like to remain involved during further refinement of the highway design. If you need further information, please do not hesitate to call.

Sincerely,

Hiller West, AICP
Planning Director

c: Tamarah Knapp, City Administrator

BELOW THE SNOW
BUCKLEY
1890
ABOVE THE FOG

Planning & Community Development

Mayor John Bianusa

RECEIVED
DEC 14 1995
[illegible] REGION

December 12, 1995

Mr. Steve Bennett, P.E.
Washington State Department of Transportation
District 3 Headquarters
P.O. Box 47440
Olympia, WA 98504

Re: Route Development Plan - SR 410

Dear Mr. Bennett

Thank you for the November 9 meeting summary and your recent letter requesting comments. The summary generally reflects the consensus achieved by the Steering Committee at the last meeting. I would like to add the following comments:

- Page 5 of the Summary, section entitled "Mundy-Loss Rd to Hinkleman Rd": the last sentence is unfinished.
- Page 6, section entitled "City of Buckley": the Committee agreed that construction of a sidewalk along the east side of SR 410, adjacent to the unfinished paved pedestrian trail, would not be necessary; instead, the existing pedestrian trail would be extended. The exact location of the trail improvements would be coordinated with the City.

As noted in the summary on page 5, by means of this letter the City of Buckley requests redesignation of the SR 410 segment from Mundy-Loss Road to Hinkleman Road to a Class 3 Access Management facility. It is understood that this will involve installation of curb, gutter, and pedestrian improvements along both sides of the highway. In addition, the improvements will include reconstruction of the SR 410/SR 165/Ryan Road intersection, and installation of a traffic signal at the SR 410/Park Avenue intersection. The above projects are also listed in the City of Buckley 1995 Comprehensive Plan.

The date of January 23, 1996 has been scheduled for a workshop presentation by WSDOT regarding the Route Development Plan. The workshop will be held at 7:00 P.M. at the Buckley Multi-Purpose Building, 811 Main Street. It is anticipated that the median design (i.e. raised landscaping or median barrier) will be discussed with the City Council

811 Main Street • P.O. Box D • Buckley, WA 98321 Phone: 829-1921 Fax: 829-2659 TDD/Voice: 1-800-833-6384

Your efforts to involve the City of Buckley in this very important project are appreciated. If you have any questions, please feel free to call.

Sincerely,

Hiller West, AICP
Planning Director

c: Mayor John Blanusa
Tamarah Knapp, City Administrator

Puget Sound Regional Council
PSRC

November 27, 1995

Steve Bennett
Regional Development Engineer
Washington State Department of Transportation
Olympic Region Headquarters
5270 Capitol Blvd., Tumwater
P.O. Box 47440
Olympia, WA 98504-7440

Dear Mr. Bennett:

In response to your October 19, 20, and 23 letters concerning the SR 161, SR 162, and SR 410 corridor route development plans, the Regional Council staff would like to transmit the following comments on the issues identified in your letters. I apologize for the delay in responding, but due to personal reasons, I was unable to attend any of the steering committee meetings held in early November.

Regarding specific route issues, the following need to be addressed:

- For SR 161 particularly, attention to the connection between the pedestrian/bicycle facilities on the state route and those facilities serving the urban centers is necessary. A pedestrian overcrossing to South Hill Mall was proposed by Puyallup, but there is no reference to any pedestrian/bicycle connection between the Puyallup urban center and proposed facilities on SR 161, SR 162, and SR 410. How would these state route facilities serve to improve those connections? Are there local facility connections proposed to the urban centers of South Hill Mall and Puyallup? As you know, an important policy of VISION 2020 is to improve connections to centers, especially for non-SOV modes.

- On SR 162, access management on the segment between Orting and South Prairie was suggested to change from Class 3 to Class 2, with a median barrier possible. This is essentially a rural area and it does not appear that control of access through use of a barrier is appropriate.

The following are general comments for all routes:

- The larger long-term planning environment for Pierce County should be

addressed. What is the effect of proposed major regional highway corridors on the plans for each route? What effect will the proposed Cross Base Highway or other planned facilities in the area have on traffic volumes on these three routes? Do future interchanges with proposed corridors need to be included in the route development plans for SR 161, 162, and 410? Should the three routes be looked at as one system serving that area of the county?

- The route development plans should address how land use and transportation will work together to bring about the desired movement of people and goods in the area. Access management is more likely to be successful if a combined land use/transportation strategy is used. Preservation of right-of-way along the three routes should be addressed as part of that strategy. (I know that land use/transportation links found in local comprehensive plans were documented early in this planning process. Are these going to be incorporated into the route development plans?)

We appreciate the opportunity to comment on the issues and look forward to participating in the upcoming phases of work. If you have any questions or comments about the above, please give me a call at 464-6180.

Sincerely,

Anthony W. Lickteig
Associate Planner

cc: Peter Beaulieu, Principal Planner
Don Pethick, Principal Planner

c:\transys\piercert.dev awl

Washington State
Department of Transportation
Office of District Administrator
5720 Capitol Blvd., KT-11
Tumwater, Washington
P O Box 9327
Olympia, Washington 98504-9327

Duane Berentson, Secretary

December 2, 1987

David T. Hedges, P.E.
City Engineer
City of Buckley
PO Box D
Buckley, WA 98321

SR 410 MP 2.24
SR 165/410 Intersection
Future Improvements

Dear Mr. Hedges:

This letter is in answer to your concern for needed improvements to the SR 410/SR 165 intersection. We have reviewed several possible improvements that make maximum use of the right of way you are obtaining from the railroad.

Attached are three possible plans for connecting the local streets and highways in the vicinity of the intersection. These plans are conceptual only and are not intended to show required channelization.

As you suggested, the first priority is to consider a single 90 degree access point with SR 165. In order to increase safety and reduce congestion in the future, the local access to SR 165 also needs to be placed some distance away from SR 410. Plans 1 and 2 leave only approximately 200 feet between SR 410 and local access. Plan 3 provides a more adequate distance, but requires right of way not now available for road use.

The actual plan will depend on future traffic, on City land use plans and on local growth patterns. We do not currently have these improvements funded but are willing to consider them in the future. For your consideration in retaining adequate right of way, our recommendation would be Plan 3.

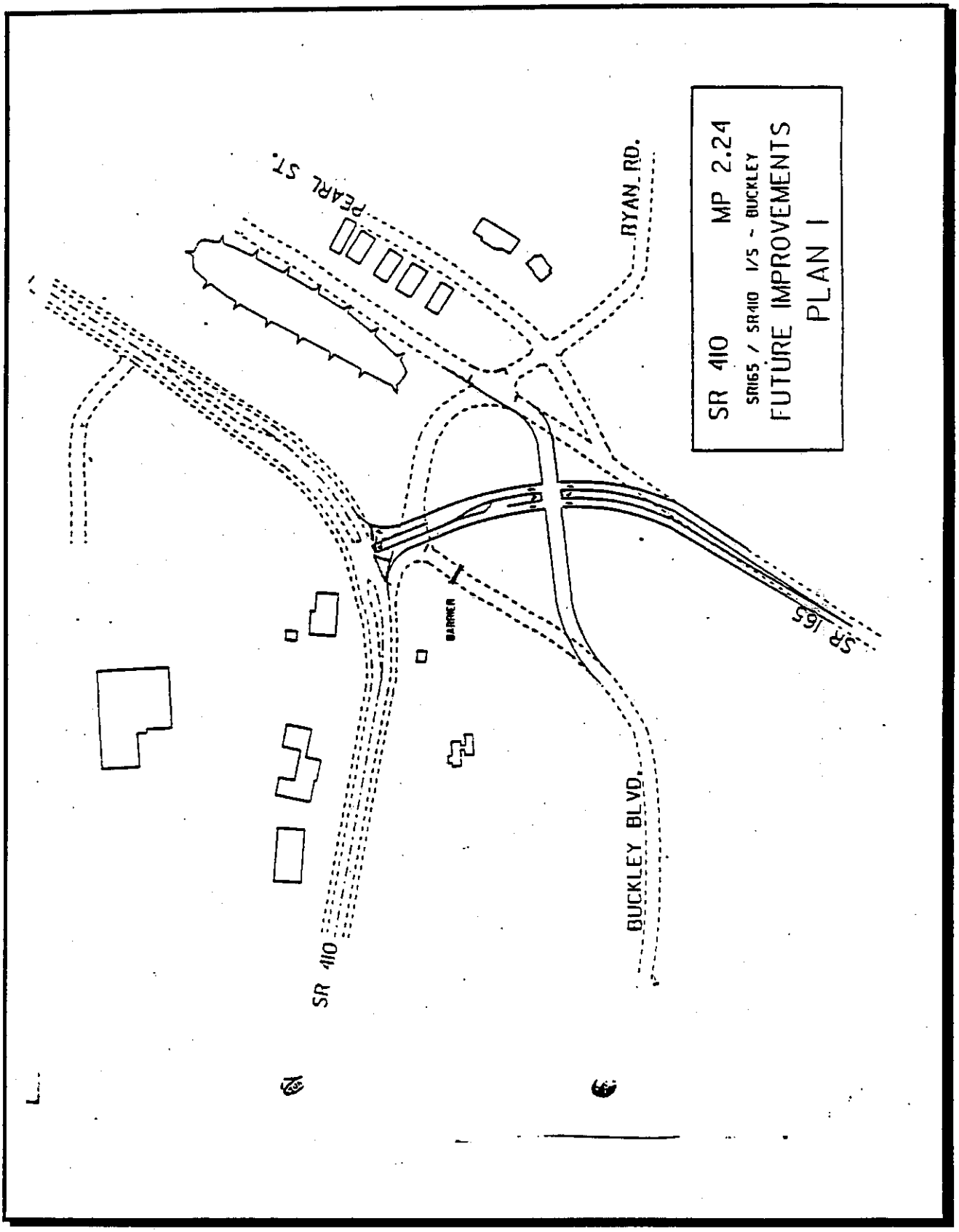
Sincerely yours,

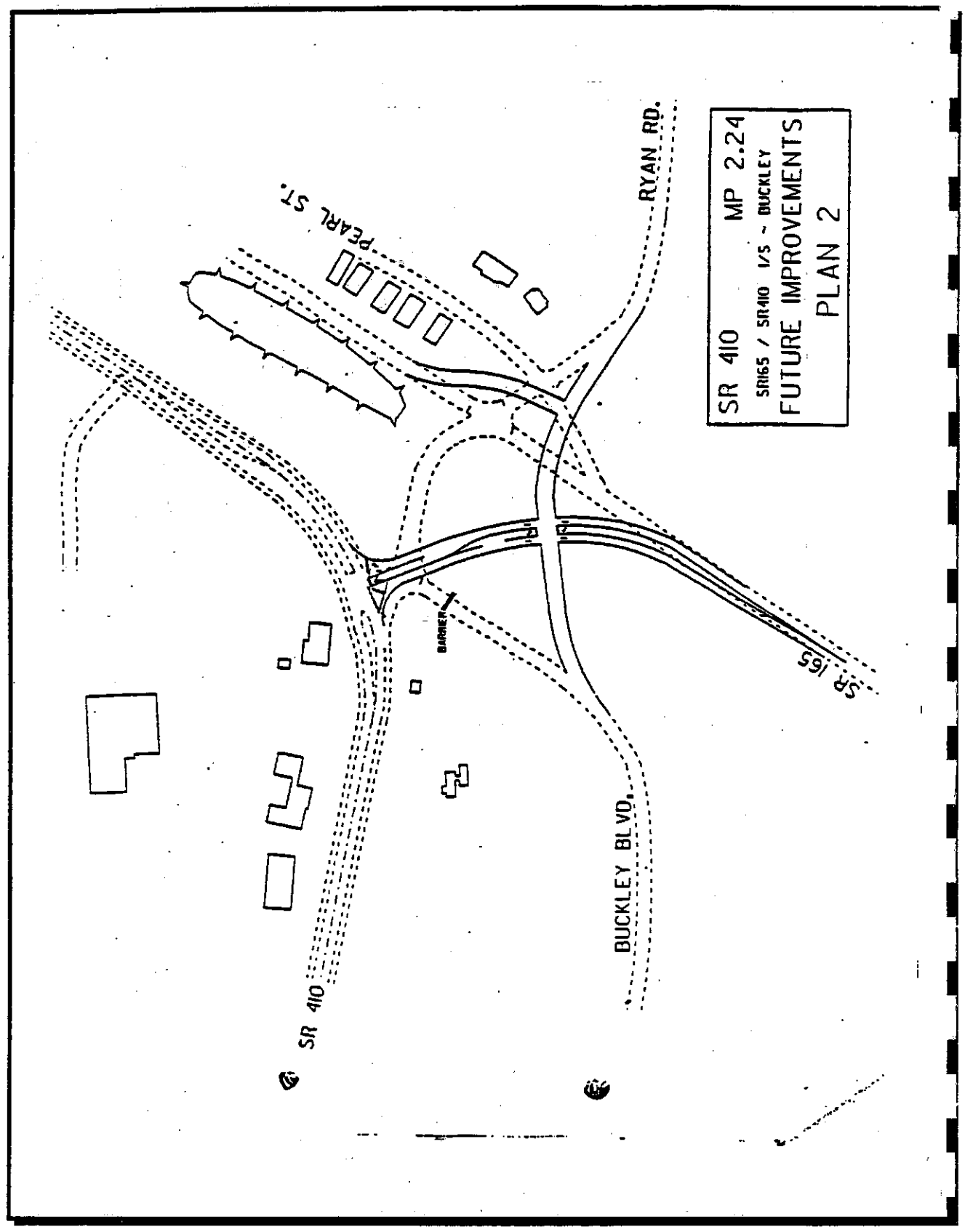
E. R. Burch, P.E.
Project Development Engineer

ERB:rb
REH/ACH

Attachment

cc: O. George
J. Vorass
P. Horton


SR 410 MP 2.24
SR165 / SR410 I/S - BUCKLEY
FUTURE IMPROVEMENTS
PLAN I
PEARL ST.
RYAN RD.
SR 165
BARKER
BUCKLEY BLVD.
SR 410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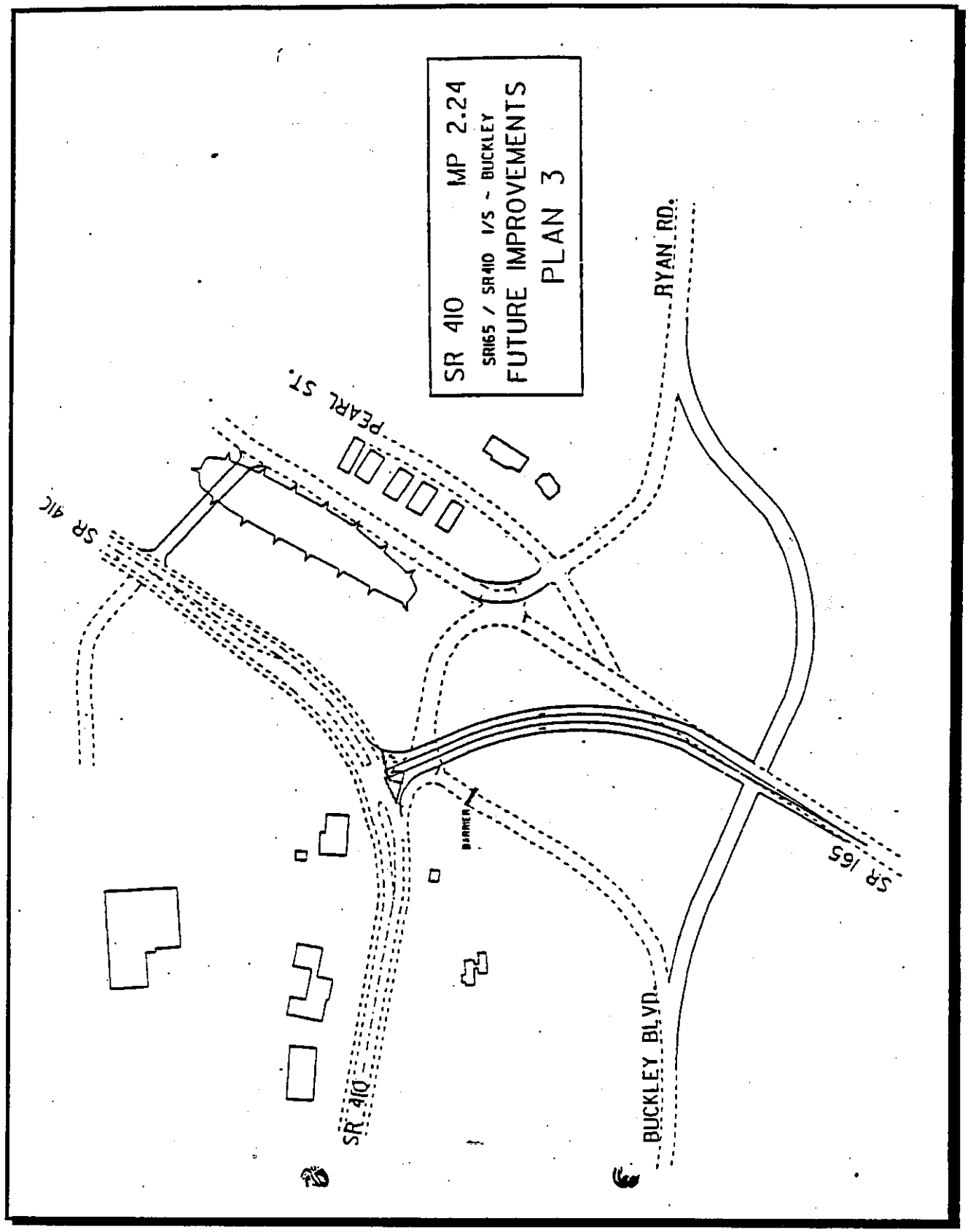
SR165 / SR410 I/S ~ BUCKLEY
FUTURE IMPROVEMENTS
PLAN 2
PEARL ST.
RYAN RD.
BARRIER
SR 165
BUCKLEY BLVD.
SR 410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SR165 / SR410 I/S - BUCKLEY
FUTURE IMPROVEMENTS
PLAN 3
RYAN RD.
PEARL ST.
SR 410
SR 165
BARRIER
SR 410
BUCKLEY BLVD.

Appendix D Funding and Implementation

This Appendix presents a listing of the Steering Committee Recommendations introduced in Chapter 3, along with available information regarding estimated project costs and recommended time frames. Cost estimates shown are taken from the most current *WSDOT State Highway System Plan* at the time of this printing. No new cost estimates have been provided as a result of this RDP.

For the most current information regarding project funding and prioritization, consult the most recent version of the *Highway System Plan* or contact the Olympic Region Program Management Office.

About Mobility Improvement Projects:
Improvements to deficiencies in urban and rural areas of the state are funded based upon urban and rural designations of the Growth Management Boundary. Allocation of urban and rural Mobility funds to each region is based on a combination of the region's prorated share of the total *Highway System Plan* mobility deficiencies and targeting top mobility deficiencies throughout the state. Nearly all of the mobility improvements listed for these routes would require additional revenue authority, such as an increased gas tax.

About Safety Improvement Projects:
Safety improvement Projects are programmed similar to Mobility projects. They are ranked according to Cost/Benefit Analyses. This Route Development Plan does not address time frame for completion of the Safety Improvement Projects. However, they are listed with associated cost estimates from the *Highway System Plan.*

D.1 Mobility Improvement Projects

Table D.1-1:
State Route 410 Recommended Mobility Improvements

SR 410 Project Description	Recommended Time Frame	System Plan Estimated Cost (1995 Million $)	Additional Comments
SR 167 Interchange to 166th Ave E Widen to 6 lanes creating HOV lanes, I.T.S. and Enhanced Transit	Beyond six years	$9.43 M to $12.58 M	
166th Ave E to 184th Ave E Vicinity Widen to 6 lanes creating HOV lanes, I.T.S. and Enhanced Transit	Beyond six years	Cost estimate not available **Not contained in current *Highway System Plan***	This strategy is not lis in the current Highwa System Plan
214th Ave to 234th Ave Add 2 Lanes & Two Way Left Turn Lane, Signal	Short Term (1997 - 2003)	System Plan shows a cost estimate range of $18.3 M to $24.4 M to build all three of these improvements.	Total required fundin not secured and an increase in the fuel tax likely required for these projects to be comple within the next six ye
234th Ave to Hinkleman Rd Add Additional Lanes	Short Term (1997 - 2003)		
Hinkleman Rd to Park Ave Widening to 4 or 5 Lanes	Short Term (1997 - 2003)		

Source: WSDOT - State Highway System Plan 1997-2016

D.2 Safety Improvement Projects

The Steering Committee Safety Improvement Recommendations discussed in Chapter 3 of this RDP are shown below with their respective estimated costs.

Table D.2-1:
State Route 410 Recommended Safety Projects

Project Description	System Plan Estimated Cost (1995 Million $)
MP 8.90 to 8.93, Risk, Cross-section/Geometric Improvements	$ 0.03 M to $0.04 M
MP 11.00 to 13.00, HAC, Ramp improvements and miscellaneous access treatments	$5.60 M to $7.46 M
MP 11.65 to MP 11.86, Risk, No Action: included in Accident Reduction improvement	$0.00
MP 12.56 to MP 12.72, Risk, No Action: included in Accident Reduction improvements	$0.00
MP 18.00 to MP 21.99, HAC, 5000' flatten ditch slope	$0.23 M to $0.29 M
MP 20.66 to MP 20.84, Risk, Cross-section/Geometric Improvements	$0.16 M to $0.22 M

Source: WSDOT - State Highway System Plan 1997-2016

D.3 Environmental Retrofit Projects

The Environmental Retrofit projects discussed in Chapter 3 of this RDP are shown below with their respective estimated costs.

Table D.3-1:
State Route 410 Recommended Environmental Retrofit Projects

Project Description	System Plan Estimated Cost (1995 Million $)
MP 9.67, Storm Water, Improve storm water runoff control-Potential solutions: Bioswale. Note: Estimated cost does not include R/W acquisition if needed.	$0.03 M to $0.04 M
Mile 12 Vicinity--identified by the RDP Steering Committee as a section that needs to be evaluated for storm water runoff quantity and quality	No cost available **Not contained in current Highway System Plan**
MP 18.62, Storm Water, Improve storm water runoff control - potential solutions: Wet Vault. Note: Estimated cost does not include R/W acquisition if needed	$0.28 M to $0.38 M

Source: WSDOT State Highway System Plan, 1997-2016

This Appendix provides selected text from WAC 468-52 for informational purposes as it relates to highway access management. Due to volume, the complete chapter is not presented. For additional information, please refer to other related chapters such as WAC 468-51 and RCW 47.50 (not reproduced in this Appendix).

WAC 468-52-010 Purpose.

This chapter is adopted in accordance with chapter 47.50 RCW for the implementation of an access control classification system and standards for the regulation and control of vehicular ingress to, and egress from the state highway system.

WAC 468-52-020 Definitions.

For the purposes of this chapter, the following definitions of the terms shall apply unless the context clearly indicates otherwise:

"Conforming connection" means a connection that meets current department location, spacing, and design criteria.

"Connection" means approaches, driveways, turnouts, or other means of providing for the right of access to or from controlled access facilities on the state highway system.

"Connection permit" means a written authorization given by the department for a specifically designed connection to the state highway system at a specific location for a specific type and intensity of property use and specific volume of traffic for the proposed connection, based on the final stage of proposed development of the applicants property. The actual form used for this authorization will be determined by the department.

"Controlled access facility" means a transportation facility (excluding limited access facilities as defined in chapter 47.52 RCW) to which access is regulated by the governmental entity having jurisdiction over the facility. Owners or occupants of abutting lands and other persons have a right of access to and from such facility at such points only and in such manner as may be determined by the governmental entity.

"Corner clearance" means the distance from an intersection of a public or private road to the nearest connection along a controlled access facility. This distance is measured from the closest edge of the traveled way of the intersecting road to the closest edge of the traveled way of the connection measured along the traveled way (through lanes).

"Department" means the Washington state department of transportation.

"Governmental entity" means, for the purpose of this chapter, a unit of local government or officially designated transportation authority that has the responsibility for planning, construction, operation, maintenance, or jurisdiction over transportation facilities.

"Intersection" means an at grade connection on a state highway with a road or street duly established as a public road or public street by the local governmental entity.

"Joint use connection" means a single connection point that serves as a connection to more than one property or development, including those in different ownership's or in which access rights are provided in the legal descriptions.

"Limited access facility" means a highway or street especially designed or designated for through traffic, and over, from, or to which owners or occupants of abutting land, or other persons have no right or easement, or only a limited right or easement of access, light, view, or air by reason of the fact that their property abuts upon such limited access facility, or for any other reason to accomplish the purpose of a limited access facility.

"Nonconforming connection" means a connection not meeting current department location, spacing, or design criteria.

"Permit" means written approval issued by the department, subject to conditions stated therein, authorizing construction, reconstruction, maintenance, or reclassification of a state highway connection and associated traffic control devices on or to the departments right of way.

"Permitting authority" means the department or any county, municipality, or transportation authority authorized to regulate access to their respective transportation systems.

"State highway system" means all roads, streets, and highways designated as state routes pursuant to chapter 47.17 RCW.

WAC 468-52-030 General.

The connection and intersection spacing distances specified in this chapter are minimums. Greater distances may be required by the department on individual permits issued in accordance with chapter 468-51 WAC to provide desirable traffic operational and safety characteristics. If greater distances are required, the department will document, as part of the response to a connection permit application pursuant to chapter 468-51 WAC, the reasons, based on traffic engineering principles, that such greater distances are required. Nonconforming permits may be issued in accordance with chapter 468-51 WAC allowing less than minimum spacing where no other reasonable access exists, or where it can be substantiated by a traffic analysis in the permit application that allowing less than the minimum spacing would not

adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

WAC 468-52-040 Access control classification system and standards.

This section provides an access control classification system consisting of five classes. The functional characteristics and the access control design standards for each class are described. The classes are arranged from the most restrictive, class one, to the least restrictive, class five. This access control classification system does not include highways or portions thereof that have been established as limited access highways pursuant to chapter 47.52 RCW. For state highways that are planned for the establishment of limited access control in accordance with the Master Plan for Limited Access Highways, an access control classification will be assigned to each highway segment to remain in effect until such time that the facility is established as a limited access facility.

On all access classes, property access shall be located and designed to minimize interference with transit facilities and/or high occupancy vehicle (HOV) facilities on state highways where such facilities exist or where such facilities are proposed in a state, regional, metropolitan, or local transportation plan. In such cases, if reasonable access is available from the general street system, primary property access shall be provided from the general street system rather than from the state highway.

(1) Class one.

(a) Functional characteristics:

These highways have the capacity for safe and efficient high speed and/or high volume traffic movements, providing for interstate, interregional, and intercity travel needs and some intracity travel needs. Service to abutting land is subordinate to providing service to major traffic movements. Highways in this class are typically distinguished by a highly controlled, limited number of public and private connections, restrictive medians with limited median openings on multilane facilities, and infrequent traffic signals.

(b) Access control design standards:

(i) It is the intent that the design of class one highways be generally capable of achieving a posted speed limit of fifty to fifty-five mph. Spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one mile. One-half mile spacing may be permitted, but only when no reasonable alternative access exists.

(ii) Private direct access to the state highway shall not be permitted except when the property has no other reasonable access to the general street system. The following standards will be applied when direct access must be provided:

(A) The access connection shall continue until such time that other reasonable access to a highway with a less restrictive access control classification or access to the general street system becomes available and is permitted.

(B) The minimum distance to another public or private access connection shall be one thousand three hundred twenty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit. No more than one connection shall be provided to an individual parcel or to contiguous parcels under the same ownership.

(C) All private direct access shall be for right turns only on multilane facilities, unless special conditions warrant and are documented by a traffic analysis in the connection permit application, signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(D) No additional access connections to the state highway shall be provided for newly created parcels resulting from property divisions. All access for such parcels shall be provided by internal road networks. Access to the state highway will be at existing permitted connection locations or at revised connection locations, as conditions warrant.

(iii) A restrictive median shall be provided on multilane facilities to separate opposing traffic movements and to prevent unauthorized turning movements.

(2) Class two.

(a) Functional characteristics:

These highways have the capacity for medium to high speeds and medium to high volume traffic movements over medium and long distances in a safe and efficient manner, providing for interregional, intercity, and intracity travel needs. Direct access service to abutting land is subordinate to providing service to traffic movement. Highways in this class are typically distinguished by existing or planned restrictive medians, where multilane facilities are warranted, and minimum distances between public and private connections.

(b) Access control design standards:

(i) It is the intent that the design of class two highways be generally capable of achieving a posted speed limit of thirty-five to fifty mph in urbanized areas and forty-five to fifty-five mph in rural areas. Spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-half mile. Less than one-half mile intersection spacing may be permitted, but only when no reasonable alternative access exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43

RCW.

(ii) Private direct access to the state highway system shall be permitted only when the property has no other reasonable access to the general street system or if access to the general street system would cause traffic operational conditions or safety concerns unacceptable to the local governmental entity. When direct access must be provided, the following conditions shall apply:

(A) The access connection shall continue until such time that other reasonable access to a highway with a less restrictive access control classification or acceptable access to the general street system becomes available and is permitted.

(B) The minimum distance to another public or private access connection shall be six hundred sixty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit. No more than one connection shall be provided to an individual parcel or to contiguous parcels under the same ownership unless the highway frontage exceeds one thousand three hundred twenty feet and it can be shown that the additional access would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

(C) All private direct access shall be for right turns only on multilane facilities, unless special conditions warrant and are documented by a traffic analysis in the connection permit application, signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(D) No additional access connections to the state highway shall be provided for newly created parcels resulting from property divisions. All access for such parcels shall be provided by internal road networks. Access to the state highway will be at existing permitted connection locations or at revised connection locations, as conditions warrant.

(iii) On multilane facilities a restrictive median shall be provided to separate opposing traffic movements and to prevent unauthorized turning movements.

(3) Class three.

(a) Functional characteristics:

These highways have the capacity for moderate travel speeds and moderate traffic volumes for medium and short travel distances providing for intercity, intracity, and intercommunity travel needs. There is a reasonable balance between direct access and mobility needs for highways in this class. This class is to be used primarily where the existing level of development of the adjoining land is less intensive than maximum buildout and where the probability of significant land use change and increased traffic demand is high. Highways in this class are typically distinguished by planned restrictive medians, where multilane facilities are warranted, and minimum distances between public and private connections. Two-way left-turn-lanes may be utilized where special conditions warrant. Development of properties

with internal road networks and joint access connections are encouraged.

(b) Access control design standards:

(i) It is the intent that the design of class three highways be generally capable of achieving a posted speed limit of thirty to forty mph in urbanized areas and forty-five to fifty-five mph in rural areas. In rural areas, spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-half mile. Less than one-half mile intersection spacing may be permitted, but only when no reasonable alternative access exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Where feasible, major intersecting roadways that may ultimately require signalization shall be planned with a minimum of one-half mile spacing. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access:

(A) No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that additional access points would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation, of the state highway.

(B) The minimum distance to another public or private access connection shall be three hundred thirty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit.

(4) Class four.

(a) Functional characteristics:

These highways have the capacity for moderate travel speeds and moderate traffic volumes for medium and short travel distances providing for intercity, intracity, and intercommunity travel needs. There is a reasonable balance between direct access and mobility needs for highways in this class. This class is to be used primarily where the existing level of development of the adjoining land is more intensive and where the probability of major land use changes is less probable than on class three highway segments. Highways in this class are typically distinguished by existing or planned nonrestrictive medians. Restrictive medians may be used as operational conditions warrant to mitigate turning, weaving, and crossing conflicts. Minimum connection spacing standards should be applied if adjoining properties are redeveloped.

(b) Access control design standards:

(i) It is the intent that the design of class four highways be generally capable

of achieving a posted speed limit of thirty to thirty-five mph in urbanized areas and thirty-five to forty-five mph in rural areas. In rural areas, spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-half mile. Less than one-half mile intersection spacing may be permitted, but only when no reasonable alternative access exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Where feasible, major intersecting roadways that may ultimately require signalization shall be planned with a minimum of one-half mile spacing. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access:

(A) No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that additional access points would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

(B) The minimum distance to another public or private access connection shall be two hundred fifty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit.

(5) Class five.

(a) Functional characteristics:

These highways have the capacity for moderate travel speeds and moderate traffic volumes for primarily short travel distances providing for intracity and intracommunity trips primarily for access to state highways of higher classification. Access needs may generally be higher than the need for through traffic mobility without compromising the public health, welfare, or safety. These highways will generally have nonrestrictive medians.

(b) Access control design standards:

(i) It is the intent that the design of class five highways be capable of achieving a posted speed limit of twenty-five to thirty-five mph. In rural areas, spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-quarter mile. Less than one-quarter mile spacing may be permitted where no reasonable alternative exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Where feasible, major intersecting roadways that may

ultimately require signalization shall be planned with a minimum of one-quarter mile spacing. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access:

(A) No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that additional access points would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

(B) The minimum distance to another public or private access connection shall be one hundred twenty-five feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit.

(6) Interim standards. The interim standards set forth in this section shall be effective for all segments of the state highway system, except where access rights have been previously acquired pursuant to chapter 47.52 RCW, until superseded by an adopted access control classification as defined in this chapter. These interim standards are mandatory for all state highways where the department is the permitting authority, and are advisory for city streets designated as state highways pursuant to chapter 47.24 RCW where incorporated cities or towns are the permitting authority. Permit applications received after adoption of this chapter, but before the classification of a highway segment is adopted, shall be reviewed for consistency with the interim standards. After a highway segment has been classified pursuant to this chapter, the standards described for that particular class shall supersede the interim standards for the classified highway segment.

(7) **Corner clearance.** Corner clearances for connections shall meet or exceed the minimum connection spacing requirements of the interim standards, or of the applicable access class where the highway segment has been assigned a classification. A single connection may be placed closer to the intersection, pursuant to the permit application process specified in chapter 468-51 WAC, and in accordance with the following criteria:

(a) If, due to property size, corner clearance standards of this chapter cannot be met, and where joint access meeting or exceeding the minimum corner clearance standards cannot be obtained, or is determined by the department to be not feasible because of conflicting land use or conflicting traffic volumes or operational characteristics, then the following minimum corner clearance criteria may be used:

*For Access Class 5 and for speeds less than thirty-five mph, one hundred twenty-five feet may be used.

(b) In cases where connections are permitted under the above criteria, the permit issued pursuant to chapter 468-51 WAC shall contain the following additional conditions:

(i) There shall be no more than one connection per property frontage on the state highway.

(ii) When joint or alternate access meeting or exceeding the minimum corner clearance standards becomes available, the permittee will close the permitted connection, unless the permittee shows to the department's satisfaction that such closure is not feasible.

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